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**United States Department of Agriculture,  
MONTHLY LIST OF PUBLICATIONS.**

[JANUARY, 1922.]

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A copy of any of the publications listed herein, except those otherwise noted, may be obtained free upon application to the Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C., as long as the department's supply lasts.

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**FARMERS' BULLETINS—FOR FREE DISTRIBUTION.**

✉ NOTE.—As long as the department's somewhat limited supply of the current numbers of Farmers' Bulletins lasts they may be obtained by all applicants free of charge. They are also for sale at 5 cents per copy unless otherwise noted.

**Shallu, or "Egyptian Wheat," A Late-Maturing Variety of Sorghum.** By Benton E. Rothgeb, Scientific Assistant in Grain-Sorghum and Broom-Corn Investigations. Pp. 8, figs. 2. Contribution from the Bureau of Plant Industry, revised November, 1921. (Farmers' Bulletin 827.)

**Utilization of Alfalfa.** By R. A. Oakley and H. L. Westover, Agronomists, Office of Forage-Crop Investigations. Pp. 44, figs. 30. Contribution from the Bureau of Plant Industry. December, 1921. (Farmers' Bulletin 1229.)

This bulletin details the advantages of the use of alfalfa as a hay, silage, and soiling crop and describes the manufacture of alfalfa meal.

**Permanent Fruit and Vegetable Gardens.** By W. R. Beattie, Extension Horticulturist, and C. P. Close, Extension Pomologist, Office of Horticultural and Pomological Investigations. Pp. 23, figs. 11. Contribution from the Bureau of Plant Industry. December, 1921. (Farmers' Bulletin 1242.)

This bulletin gives brief instructions for the planting and care of small fruits, asparagus, rhubarb, and horseradish.

**Standard Varieties of Chickens. V. The Bantam Breeds.** By Rob R. Slocum, Animal Husbandry Division. Pp. 24, figs. 31. Contribution from the Bureau of Animal Industry. December, 1921. (Farmers' Bulletin 1251.)

This bulletin gives information concerning the general characteristics of bantams, together with a sufficient description of each standard breed and variety, to enable any one desiring to keep these fowls to select the variety which will best suit his fancy and purpose.

**DEPARTMENT BULLETINS—TECHNICAL.**

✉ The publications listed below are technical or scientific bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts.



**Cultural Experiments With Grain Sorghums in the Texas Panhandle.** By Benton E. Rothgeb, formerly Assistant Agronomist in Charge of Grain-Sorghum and Broom-Corn Investigations. Pp. 43, figs. 11. Contribution from the Bureau of Plant Industry. (Professional Paper.) Jan. 20, 1922. (Department Bulletin 976.) Price, 10 cents.

Gives history and results of experiments with grain sorghums conducted at Channing and Amarillo, Tex. Suitable for distribution in the Panhandle region and in adjacent portions of New Mexico and Oklahoma.

**Labor and Material Requirements of Field Crops.** By L. A. Moorehouse, Associate Farm Economist, and O. A. Juve, Junior Farm Economist. Pp. 56, figs. 16. Contribution from the Office of Farm Management and Farm Economics. Dec. 30, 1921. (Department Bulletin 1000.) Price, 10 cents.

Prepared to answer the demand for information relating to the quantities of labor and materials required for agricultural production, especially with reference to the staple farm crops and the leading classes of live stock.

**Effect of Date of Seeding on Germination, Growth, and Development of Corn.** By E. B. Brown, Agronomist, and H. S. Garrison, Scientific Assistant, Corn Investigations, Office of Cereal Investigations. Pp. 10. Contribution from the Bureau of Plant Industry. Jan. 11, 1922. (Department Bulletin 1014.) Price, 5 cents.

Describes results of experiments conducted at Arlington Experimental Farm.

**Bionomics of the Chinch Bug.** By Philip Luginbill, Entomological Assistant, Cereal and Forage Insect Investigations. Pp. 14, figs. 2. Contribution from the Bureau of Entomology. (Professional Paper.) Jan. 31, 1922. (Department Bulletin 1016.) Price, 5 cents.

A technical discussion of the subject based upon results of experiments conducted at Columbia, S. C. Of interest to entomologists generally.

**The Relative Toxicity of Strychnine to the Rat.** By Erich W. Schwartz, Pharmacologist in Charge, Pharmacological Laboratory. Pp. 19. Contribution from the Bureau of Chemistry. Jan. 9, 1922. (Department Bulletin 1023.) Price, 5 cents.

Describes the results of experiments conducted to determine the minimum amounts of strychnine which are required to kill rats.

**Studies in the Clarification of Unfermented Fruit Juices.** By Joseph H. Caldwell, Plant Physiologist, Office of Horticultural and Pomological Investigations. Pp. 30. Contribution from the Bureau of Plant Industry. (Professional Paper.) Jan. 23, 1922. (Department Bulletin 1025.) Price, 5 cents.

Describes some simple methods, by which the fruit grower or individual consumer may make products of good quality and attractive appearance without the use of special equipment.

**Crop Insurance: Risks, Losses, and Principles of Protection.** By V. N. Valgren, Associate Agricultural Economist. Pp. 27. Contribution from the Office of Farm Management and Farm Economics. Jan. 23, 1922. (Department Bulletin 1043.) Price, 5 cents.

Discusses the subject of crop insurance from the standpoint of the farmer. Suitable for general distribution.

#### MISCELLANEOUS.

**Statistics of Cooperative Extension Work, 1921-22.** By Eugene Merritt, Assistant to the Director. Pp. 18. Contribution from the States Relations Service. January, 1922. (Department Circular 203.) Price, 5 cents.

#### SERIALS.

**Journal of Agricultural Research.** (For sale only.) Vol. 21, Contents and Index. Pp. vii, 877-887. 1921. Price, 15 cents.

**NOTE.**—Volumes 1 to 4 of the Journal of Agricultural Research were published monthly, volumes 5 to 16 weekly, volume 17 monthly, volumes 18, 19, 20, and 21 semi-monthly. Beginning with volume 22, this issue is weekly. The Journal distributed free only to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. It will not be sent free to individuals. The Superintendent of Documents will receive subscriptions for this publication, the price being 15 cents a single copy, \$3 a year for domestic circulation, and \$4.25 a year for foreign circulation.



**Experiment Station Record.** Vol. 45, No. 8. December, 1921. Pp. 701-800. Price, 10 cents.

**NOTE.**—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, 10 numbers each, at 75 cents a volume. Foreign subscription, \$1.25 a volume.

**Monthly Crop Reporter,** Vol. 7, No. 12. December, 1921. Pp. 145-164. (Bureau of Markets and Crop Estimates.)

Contains estimates of the acreage, production, and value of the important farm crops of the United States in 1921, 1920, and 1919; also the index to Volume 7. This number will be the last issue of the Monthly Crop Reporter.

**The Official Record.** Vol. 1, Nos. 1 to 4, January 4, 11, 18, and 25, 1922.

This publication carries official announcements and information concerning the work of the department in general and of the various bureaus. The distribution is confined to department employees.

**Weather, Crops and Markets.** Vol. 1, Nos. 1, 2, 3, and 4, Jan. 7, 14, 21, and 28, 1922.

This is a new publication to be issued weekly beginning Jan. 7, 1922, which will combine three important regular periodicals heretofore issued as The Market Reporter, The Monthly Crop Reporter, and The National Weather and Crop Bulletin, and which have been discontinued.

It will be sent, free of charge, to persons requesting it and showing a need for it. Application should be made to the Division of Publications of this department and the following information should be given: (a) Name and address; (b) business or occupation in connection with which it will be of value to you, such as farmer or producer, retail dealer, wholesale dealer, broker or commission man, manufacturer, commercial exchange, agricultural institution worker, publisher, or cooperator with the Department of Agriculture.

#### SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.

These contain *only* information, instructions, and notices governing the enforcement of the food and drugs act, meat inspection, 28-hour, and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. *Free distribution* is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only* at prices noted.

**Bureau of Animal Industry.** No. 176. December, 1921. Pp. 121-129. Jan. 20, 1922. Price, 5 cents.

**Bureau of Biological Survey.** No. 45. Amending the regulations for the protection of land fur-bearing animals in Alaska. Pp. 1. Jan. 16, 1922. Price, 5 cents.

**Bureau of Chemistry.** Supplement 124. (N. J. 9651-9700.) Pp. 467-503. Jan. 7, 1922.

**Same.** Supplement 125. (N. J. 9701-9750.) Pp. 505-538. Jan. 11, 1922. Price, 10 cents.

**Same.** Supplement 126. (N. J. 9751-9800. Pp. 539-578. Jan. 11, 1922. Price, 10 cents.

**Same.** Supplement 127. (N. J. 9801-9850.) Pp. 579-613. Jan. 27, 1922. Price, 10 cents.

**Insecticide and Fungicide Board.** No. 38. Notices of Judgments 501-700. Pp. 889-900. Dec. 31, 1921. Price, 5 cents.

**Same.** No. 39. Notices of Judgments 701-725. Pp. 901-926. Dec. 31, 1921. Price, 5 cents.

#### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Redwillow County, Nebraska.** By Louis A. Wolfanger, of the U. S. Department of Agriculture, and A. W. Goke, of the Nebraska Soil Survey. Pp. 48, fig. 1, map. (From B. O. Soils, 1919.) Price, 15 cents.

JOHN L. COBBS, Jr.,  
Chief, Division of Publications.







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
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
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### DEPARTMENT BULLETINS—TECHNICAL.

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**Investigations of the White-Pine Blister Rust.** By Perley Spaulding, Pathologist, Office of Investigations in Forest Pathology. Pp. 100, pls. 6, figs. 13. Contribution from the Bureau of Plant Industry. (Professional Paper.) Feb. 6, 1922. (Department Bulletin 957.) Price, 20 cents.

A technical discussion of the disease, with descriptions of experiments undertaken for its control.

**The Relation of Land Tenure to the Use of the Arid Grazing Lands of the Southwestern States.** By E. O. Wooton, Assistant Agricultural Economist. Pp. 72, figs. 6. Contribution from the Office of Farm Management and Farm Economics. Feb. 23, 1922. (Department Bulletin 1001.) Price, 15 cents.

A discussion of the practicability of and the necessity for the extension of the National forest plan to the arid grazing ranges.

**Effects of Mutilating the Seeds on the Growth and Productiveness of Corn.** By E. B. Brown, Agronomist, Corn Investigations, Office of Cereal Investigations. Pp. 14, pls. 3. Contribution from the Bureau of Plant Industry. (Professional Paper.) Feb. 23, 1922. (Department Bulletin 1011.) Price, 5 cents.

A technical description of field experiments with the use of seed deficient in food reserves.

**Relation of Initial Temperature To Pressure, Vacuum, and Temperature Changes in the Container During Canning Operations.** By C. A. Magoon and C. W. Culpepper, Office of Horticultural and Pomological Investigations. Pp. 52, figs. 37. Contribution from the Bureau of Plant Industry. Feb. 3, 1922. (Department Bulletin 1022.) Price, 10 cents.

A technical presentation of the subject of especial interest to commercial canners.

**Feeding Experiments With Grade Beef Cows Raising Calves.** By E. W. Sheets and R. H. Tuckwiller, Animal Husbandry Division. Pp. 17, figs. 8. Contribution from the Bureau of Animal Industry. Feb. 10, 1922. (Department Bulletin 1024.) Price, 5 cents.

Gives rations, gains and losses in weight, and calves produced, as well as costs of the rations and of raising calves to weaning age. Suitable for distribution in West Virginia and adjacent territory.



**The Red Spider on the Avocado.** By G. F. Moznette, Assistant Entomologist, Tropical and Subtropical Fruit Insect Investigations. Pp. 15, pl. 1, figs. 11. Contribution from the Bureau of Entomology. (Professional Paper.) Feb. 17, 1922. (Department Bulletin 1035.) Price, 10 cents.

Describes life history and habits of this insect and suggests methods of control.

**Effect of Winter Rations on Pasture Gains of Calves.** By E. W. Sheets and R. H. Tuckwiller, Animal Husbandry Division. Pp. 15, figs. 9. Contribution from the Bureau of Animal Industry. Feb. 4, 1922. (Department Bulletin 1042.) Price, 5 cents.

Describes the influence of winter rations on pasture gains of calves and estimates the cost of rations for wintering calves. Suitable for distribution in West Virginia and adjacent States.

**Farm Mortgage Loans by Banks, Insurance Companies, and Other Agencies.** By V. N. Valgren, Associate Agricultural Economist, and Elmer E. Engelbert, Junior Economist in Farm Finance. Pp. 23. Contribution from the Office of Farm Management and Farm Economics. Dec. 28, 1921. (Department Bulletin 1047.) Price, 5 cents.

A statement as to the amount of farm credit available from various sources, the cost of such credit to the farmer, the term for which loans are available, and the method of repayment provided for.

**Bank Loans to Farmers on Personal and Collateral Security.** By V. N. Valgren, Associate Agricultural Economist, and Elmer E. Engelbert, Junior Economist in Farm Finance. Pp. 26, figs. 2. Contribution from the Office of Farm Management and Farm Economics. Feb. 7, 1922. (Department Bulletin 1048.) Price, 5 cents.

A statement showing amount of personal and collateral bank loans to farmers outstanding on December 31, 1920, by States, rates of interest, nature of the security, and term of loan.

#### CIRCULARS.

**General Rules and Regulations of the Secretary of Agriculture with respect to Stockyard Owners, Market Agencies, and Dealers. Packers and Stockyards Act.** 1921. (Public No. 51, 67th Congress). 1922. (Circular 156, Office of the Secretary.) Price, 5 cents.

**The Paper Dress Form.** Pp. 10, figs. 9. Contribution from the Office of Extension Work, States Relations Service. January, 1922. (Department Circular 207.) Price, 5 cents.

Contains directions for making gummed paper dress forms, and is suitable for general distribution.

**Dispersion of the Boll Weevil in 1921.** By B. R. Coad, E. S. Tucker, W. B. Williams, F. F. Bondy, and R. C. Gaines. Pp. 2. map. Contribution from the Bureau of Entomology. Feb. 23, 1922. (Department Circular 210.) Price, 5 cents.

**Commercial Control of Citrus Scab.** By John R. Winston, Pathologist. Pp. 8. Contribution from the Bureau of Plant Industry. Feb. 15, 1922. (Department Circular 215.) Price, 5 cents.

#### MISCELLANEOUS.

**Inventory of Seeds and Plants Imported by the Office of Foreign Seed and Plant Introduction, during the period from Jan. 1 to Mar. 31, 1917.** Pp. 83, pls. 6. Jan. 30, 1922. (Inventory No. 50. Nos. 43980 to 44445.) Bureau of Plant Industry. Price, 20 cents.

#### SERIALS.

**Experiment Station Record.** Vol. 45, No. 9. Abstract Number. Feb. 8, 1922. Pp. 801-900. Price, 10 cents.

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**Bureau of Chemistry, Supplement 128.** (N. J. 9851-9900.) Pp. 615-648. Feb. 21, 1922. Price, 5 cents.

#### **PUBLICATIONS OF THE WEATHER BUREAU.**

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** Vol. 49, No. 10. October, 1921. February, 1922. Pp. 537-594, figs. 9, charts, 19. Price, 15 cents a copy, \$1.50 a year, payable to the Superintendent of Documents.

Special articles: Some illustrative types of Latin American rainfall. By B. O. Weitz.—Rainfall in Guatemala and Salvador in the years 1908 to 1920. By K. Sapper.—Relation between the rainfall, the temperature, and the yield of corn in Argentina. By N. A. Hessling.—Fruit-frost work in the Grand Valley of Colorado. By A. M. Hamrick. With a discussion by E. S. Nichols.—Results of evaporation observations. Compiled by R. E. Horton.—Hurricane of October 25, 1921, at Tampa, Fla. By E. H. Bowie.—The electrical charge of the atmosphere and the height of the barometer. By W. J. Humphreys.

**Same, Vol. 49, No. 11.** November, 1921. February, 1922. Pp. 595-636, charts, 32. Price, 15 cents a copy, \$1.50 a year.

Special articles: Some characteristics of United States temperatures. By R. DeC. Ward.—On the depressions observed in the values of solar radiation intensity. By L. Gorczynski.—Prolonged plant activity at Grand Haven, Mich., in Autumn of 1920. By H. Tullson.—Heavy snow storm in southern Michigan, November 8-9, 1921. By D. A. Seeley.—Discussion by A. J. Henry.—Tornadoes of November 17, 1921, in Arkansas. By W. C. Hickmon.—Great ice storm of November 26-29, in Massachusetts.—Analysis of summer precipitation at Mount Vernon, Iowa. By W. A. Moore and D. Corlett.

NOTE.—The Monthly Weather Review is sent free to cooperating meteorological services, universities and other institutions of learning which offer a course of instruction in meteorology, and to a limited number of individuals and students of the subject who may be interested in the advancement of the science of meteorology.

**Snow and Ice Bulletins** for February 7, 14, 21, and 28, 1922. These bulletins are issued weekly during the winter season, and are based upon data from regular Weather Bureau Stations, supplemented by reports from selected co-operative observers.

JOHN L. COBBS, Jr.,  
Chief, Division of Publications.







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**Screw-Worms and Other Maggots Affecting Animals.** By F. C. Bishopp, Entomologist, and J. D. Mitchell and D. C. Parman, Entomological Assistants, Investigations of Insects Affecting the Health of Animals. Pp. 20, figs. 8. Contribution from the Bureau of Entomology. Revised, 1922. (Farmers' Bulletin, 857.)

Suitable for general distribution.

**Beekeeping in the Clover Region.** By E. F. Phillips, Apiculturist in Charge, and George S. Demuth, Apicultural Assistant, Bee-Culture Investigations. Pp. 27, figs. 7. Contribution from the Bureau of Entomology. February, 1922. (Farmers' Bulletin 1215.)

The variation in the value of the clovers to the beekeeper is discussed and the methods to be followed in bringing the clover region back to its former prominence in honey production are outlined.

**Beekeeping in the Buckwheat Region.** By E. F. Phillips, Apiculturist in Charge, and George S. Demuth, Apicultural Assistant, Bee-Culture Investigations. Pp. 26, figs. 7. Contribution from the Bureau of Entomology. 1922. (Farmers' Bulletin 1216.)

Describes a system of management suitable for the buckwheat region, which will result in a full honey crop, and at the same time control European foulbrood.

**Beekeeping in the Tulip-Tree Region.** By E. F. Phillips, Apiculturist, and George S. Demuth, Apicultural Assistant, Bee-Culture Investigations. Pp. 25, figs. 6. Contribution from the Bureau of Entomology, January, 1922. (Farmers' Bulletin 1222.)

In this bulletin a method is given for the management of the apiary so that the full honey crop from this source may be obtained.

**Sewage and Sewerage of Farm Homes.** By George M. Warren, Hydraulic Engineer. Pp. 55, figs. 35. Contribution from the Bureau of Public Roads. January, 1922. (Farmers' Bulletin 1227.)

Suitable for general distribution.



**Gullies: How to Control and Reclaim Them.** By C. E. Ramser, Senior Drainage Engineer, Division of Drainage Investigations. Pp. 44, figs. 35. Contribution from the Bureau of Public Roads. February, 1922. (Farmers' Bulletin 1234.)

Shows how gullies can be prevented by increasing the absorptive capacity of the soil, by protecting the surface from erosion, and conducting the surplus water from the field at a low velocity.

**The Sugar-Beet Nematode in the Western States.** By Gerald Thorne, Assistant Nematologist, and L. A. Giddings, Agent, Office of Sugar-Plant Investigations. Pp. 15, figs. 10. Contribution from the Bureau of Plant Industry. February, 1922. (Farmers' Bulletin 1248.)

This bulletin treats of the nature and distribution of the sugar-beet nematode, indicates the most probable means by which this pest is spread, and suggests preventive measures and practical means of control.

**Sawflies Injurious to Rose Foliage.** By William Middleton, Scientific Assistant, Forest Insect Investigations. Pp. 14, figs. 7. Contribution from Bureau of Entomology. February, 1922. (Farmers' Bulletin 1252.)

Suitable for general distribution.

**Seed Peas for the Canner.** By D. N. Shoemaker, Horticulturist, Office of Horticultural and Pomological Investigations. Pp. 16, figs. 4. Contribution from the Bureau of Plant Industry. February, 1922. (Farmers' Bulletin 1253.)

This bulletin describes the requirements of a canning pea, the damage resulting from the use of spurious and unreliable seed when growing peas for the canner, and suggests proper method of securing reliable seed.

**The Production of Peas for Canning.** By Chester J. Hunn, Assistant Horticulturist, Office of Horticultural and Pomological Investigations. Pp. 24, figs. 8. Contribution from the Bureau of Plant Industry. February, 1922. (Farmers' Bulletin 1255.)

Of interest to canners and to those engaged in the commercial growing of peas.

**The Boll-Weevil Problem. Methods of Reducing Damage.** By W. D. Hunter, Entomologist in Charge, and B. R. Coad, Entomologist, Southern Field-Crop Insect Investigations. Pp. 31, figs. 5. Contribution from the Bureau of Entomology. February, 1922. (Farmers' Bulletin 1262.)

A revision of Farmers' Bulletin 848. Of interest to all cotton growers.

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**Water-Stress Behavior of Pima Cotton in Arizona.** By C. J. King, Assistant, Office of Biophysical Investigations. Pp. 24, pls. 4, figs. 3. Contribution from the Bureau of Plant Industry. (Professional Paper.) Mar. 15, 1922. (Department Bulletin 1018.) Price, 10 cents.

This bulletin reports the results of an investigation of the behavior of Pima Cotton when grown under different conditions of soil moisture and available plant food in the Salt River Valley of Arizona in 1919.

**Apanteles Melanoscelus, An Imported Parasite of the Gipsy Moth.** By S. S. Crossman, Entomological Assistant, Gipsy Moth and Brown-Tail Moth Investigations. Pp. 25, pls. 3, map. Contribution from the Bureau of Entomology. (Professional Paper.) Mar. 13, 1922. (Department Bulletin 1028.) Price, 10 cents.

Describes the life history and habits of this insect and takes up its introduction and establishment in this country.

**Seed Treatment and Rainfall in Relation to the Control of Cabbage Black-Leg.** By J. C. Walker, Assistant Professor of Plant Pathology, University of Wisconsin. Pp. 27, pls. 2. Contribution from the Bureau of Plant Industry. (Professional Paper.) Mar. 28, 1922. (Department Bulletin 1029.) Price, 10 cents.

Describes several methods of disinfecting the seed to control this disease, and explains how the disease is spread by rainfall.

**Meade Cotton, An Upland Long-Staple Variety Replacing Sea Island.** By G. S. Meloy, Bureau of Markets, and C. B. Doyle, Bureau of Plant Industry. Pp. 24, pls. 11. Joint Contribution from the Bureau of Markets and Crop Estimates and Bureau of Plant Industry. Mar. 10, 1922. (Department Bulletin 1030.) Price, 15 cents.

Of interest to cotton growers generally.



**Pecan Rosette, Its Histology, Cytology, and Relation to Other Chlorotic Diseases.** By Frederick V. Rand, Pathologist, Laboratory of Plant Pathology. Pp. 42, pls. 12. Contribution from the Bureau of Plant Industry. Mar. 20, 1922. (Department Bulletin 1038.) Price, 25 cents.

**The Sunflower as a Silage Crop.** By H. N. Vinall, Agronomist, Office of Forage-Crop Investigations. Pp. 32, figs. 8. Contribution from the Bureau of Plant Industry. Mar. 18, 1922. (Department Bulletin 1045.) Price, 10 cents.

This bulletin covers the growing and harvesting, also the feeding value, of sunflowers.

**Game as a National Resource.** By T. S. Palmer, Expert in Game Conservation. Pp. 48, figs. 4. Contribution from the Bureau of Biological Survey. Mar. 14, 1922. (Department Bulletin 1049.) Price, 10 cents.

This bulletin summarizes present information on some of the larger problems of game conservation. It is for the information of individuals and associations interested in game preservation and is prepared with a view to the more general gathering of data for use in making a survey of game resources.

**Rations for Feeding Poultry in the Packing House.** By J. S. Hepburn and R. C. Holder, Food Research Laboratory. Pp. 24. Contribution from the Bureau of Chemistry. Mar. 13, 1922. (Department Bulletin 1052.) Price, 5 cents.

Of interest to poultry packers and shippers.

**Comparison of Corn Oils Obtained by Expeller and Benzol Extraction Methods.** By A. F. Sievers, Chemical Biologist, Office of Drug, Poisonous, and Oil Plant Investigations. Pp. 20, fig. 1. Contribution from the Bureau of Plant Industry. (Professional Paper.) Mar. 11, 1922. (Department Bulletin 1054.) Price, 5 cents.

Describes the results obtained by the use of solvents for the extraction of corn oil.

**Sterility of Oats.** By Charlotte Elliot, Scientific Assistant, Laboratory of Plant Pathology. Pp. 8, pls. 4. Contribution from the Bureau of Plant Industry. (Professional Paper.) Mar. 6, 1922. (Department Bulletin 1058.) Price, 5 cents.

Gives results of experiments made to determine the cause of sterility or "blast" of oats.

#### CIRCULARS.

**Cotton-Seed Mixing Increased by Modern Gin Equipment.** By W. W. Ballard and C. B. Doyle. Pp. 12, pl. 1. Contribution from the Bureau of Plant Industry. Feb. 17, 1922. (Department Circular 205.) Price, 5 cents.

Explains that the most frequent and serious cause of deterioration in the uniformity and high quality of superior varieties of cotton is the general custom of growing a number of different varieties in the same locality and ginning the crops at centrally located public gins.

**The Occurrence of Diseases of Adult Bees.** By E. F. Phillips, Apiculturist. Pp. 16. Contribution from the Bureau of Entomology. March, 1922. (Department Circular 218.) Price, 5 cents.

#### MISCELLANEOUS.

**Inventory of Seeds and Plants Imported by the Office of Foreign Seed and Plant Introduction during the Period from April 1 to June 30, 1917.** Pp. 100, pls. 10. Contribution from the Bureau of Plant Industry. Mar. 15, 1922. (Inventory No. 51; Nos. 44446 to 44934.) Price, 20 cents.

#### SERIALS.

**The Official Record.** Vol. 1, Nos. 9 to 13, March 1, 8, 15, 22, 28, 1922.

This publication carries official announcements and information concerning the work of the department in general and of the various bureaus. The distribution is confined to department employees.

**Weather, Crops and Markets.** Vol. 1, Nos. 9 to 12, March 4, 11, 18, and 25, 1922.

This is a new publication to be issued weekly beginning Jan. 7, 1922, which will combine three important regular periodicals heretofore issued as The Market Reporter, The Monthly Crop Reporter, and The National Weather and Crop Bulletin, and which have been discontinued.

It will be sent, free of charge, to persons requesting it and showing a need for it. Application should be made to the Division of Publications of this department and the following information should be given: (a) Name and address; (b) business or occupation in connection with which it will be of value to you, such as farmer or producer, retail dealer, wholesale dealer, broker or commission man, manufacturer, commercial exchange, agricultural institution worker, publisher, or cooperator with the Department of Agriculture.



## SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Mahaska County, Iowa.** By E. C. Hall, of the U. S. Department of Agriculture, and J. Ambrose Elwell, of the Iowa Agricultural Experiment Station. Pp. 40, fig. 1, map. (From *F. O. Soils*, 1919.) Price, 15 cents.

**Soil Survey of Sabine Parish, Louisiana.** By E. H. Smies, W. E. Tharp, and A. C. Anderson, of the U. S. Department of Agriculture, and F. V. Emerson, of the Louisiana Experiment Station. Pp. 62, pls. 2, fig. 1, map. (From *F. O. Soils*, 1919.) Price, 20 cents.

**Soil Survey of Moore County, North Carolina.** By R. C. Journey, S. O. Perkins, and R. E. Devereux, of the U. S. Department of Agriculture, and L. L. Brinkley, S. F. Davidson, and W. A. Davis, of the North Carolina Department of Agriculture. Pp. 44, fig. 1, map. (From *F. O. Soils*, 1919). Price, 15 cents.

## SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.

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**Bureau of Animal Industry.** No. 177. January, 1922. Pp. 1-18. February 24, 1922. Price, 5 cents.

Same, No. 178. February, 1922. Pp. 19-28. Mar. 16, 1922. Price, 5 cents.

**Bureau of Chemistry.** Supplement 129. (N. J. 9901-9950.) Pp. 649-680. Mar. 6, 1922. Price, 5 cents.

Same. Supplement 130. (N. J. 9951-10000.) Pp. 681-716. Mar. 21, 1922. Price, 5 cents.

## PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** Vol. 49, No. 12. December, 1921. March, 1922. Pp. 637-691, figs. 27, charts, 15. Price, 15 cents a copy, \$1.50 a year, payable to the Superintendent of Documents.

**Special Articles:** Streamflow at Wagon Wheel Gap, Colo. By C. G. Bates and A. J. Henry.—Recent improvements in solar radiation observation at Calama, Chile. By C. G. Abbot.—On the structure of anticyclones and cyclones in the stratosphere over Europe. By F. X. Exner.—The Toronto symposium on barometric reductions. By C. L. Meisinger.—Summary of the hurricane of 1919, 1920, and 1921. By W. P. Day.—Hailstorm in Alabama, November 14, 1921. By P. H. Smythe.—Great rainstorm at Mount Wilson, Calif., December 17-21, 1921. By W. P. Hoge.—Storm of November 19-22 in Oregon, Washington, and Idaho, and the stormy period following. By E. L. Wells.—The Clarksdale, Ark., tornado of December 23, 1921. By J. H. Scott.—Tornado of December 24, 1921, in northeastern Louisiana. By R. A. Dyke.

**NOTE.**—The Monthly Weather Review is sent free to cooperating meteorological services, universities, and other institutions of learning which offer a course of instruction in meteorology, and to a limited number of individuals and students of the subject who may be interested in the advancement of the science of meteorology.

**Snow and Ice Bulletins** for March 7, 14, 21, and 28, 1922. These bulletins are issued weekly during the winter season, and are based upon data from regular Weather Bureau Stations, supplemented by reports from selected cooperative observers.

JOHN L. COBBS, Jr.,  
Chief, Division of Publications.



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U. S. DEPT. OF AGRICULTURE

United States Department of Agriculture,  
MONTHLY LIST OF PUBLICATIONS.

[APRIL, 1922.]

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A copy of any of the publications listed herein, except those otherwise noted, may be obtained free upon application to the Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C., as long as the department's supply lasts.

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Send all remittances to the Superintendent of Documents direct. His office is not a part of the Department of Agriculture.

FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

NOTE.—As long as the department's somewhat limited supply of the current numbers of Farmers' Bulletins lasts they may be obtained by all applicants free of charge. They are also for sale at 5 cents per copy unless otherwise noted.

**Feeding Grain Sorghums to Livestock.** By George A. Scott, Animal Husbandry Division. Pp. 14, figs. 6. Contribution from the Bureau of Animal Industry. Revised March, 1922. (Farmers' Bulletin 724.)

Of especial interest to stockmen in the semiarid sections of the southwestern United States.

**Practical Information for Beginners in Irrigation.** Pp. 44, figs. 33. Contribution from the Bureau of Public Roads. Second Revision, March, 1922. (Farmers' Bulletin 864.)

For distribution in localities where irrigation is essential to the growth of crops.

**The Care of Leather.** By E. P. Veitch, Chemist in Charge, H. P. Holman and R. W. Frey, Assistant Chemists, Leather and Paper Laboratory. Pp. 22, figs. 13. Contribution from the Bureau of Chemistry. Revised February, 1922. (Farmers' Bulletin 1183.)

This bulletin contains suggestions for a judicious selection of articles made from leather and tells how to care for them in order to obtain the maximum service.

**Trees for Town and City Streets.** By F. L. Mulford, Horticulturist, Office of Horticultural and Pomological Investigations. Pp. 40, figs. 27. Contribution from the Bureau of Plant Industry. March, 1922. (Farmers' Bulletin 1208.)

Describes the principal trees that are used for street planting in the United States.

**American Moles as Agricultural Pests and as Fur Producers.** By Theo. H. Scheffer, Assistant Biologist. Pp. 23, figs. 16. Contribution from the Bureau of Biological Survey. March, 1922. (Farmers' Bulletin 1247.)

This bulletin treats of moles occurring throughout the United States and supersedes Farmers' Bulletin 583, which deals with the habits of eastern species, and Farmers' Bulletin 832, which treats chiefly of trapping western forms for their fur.



**Olive Growing in the Southwestern United States.** By C. F. Kinman, Pomologist, Horticultural and Pomological Investigations. Pp. 43, figs. 28. Contribution from the Bureau of Plant Industry. February, 1922. (Farmers' Bulletin 1249.)

Contains directions for the cultivation and curing of olives, and a brief history of the introduction of the industry into the United States.

**A Sawfly Injurious to Young Pines.** By William Middleton, Scientific Assistant, Forest Insect Investigations. Pp. 11, figs. 10. Contribution from the Bureau of Entomology, January, 1922. (Farmers' Bulletin 1259.)

This bulletin describes the life history, habits, distribution, and natural enemies of this insect and suggests methods of control.

**Stored-Grain Pests.** By E. A. Back, Entomologist, and R. T. Cotton, Assistant Entomologist, Stored-Product Insect Investigations. Pp. 47, figs. 64. Contribution from the Bureau of Entomology. April, 1922. (Farmers' Bulletin 1260.)

Describes damage done by insects to grain in storage, and suggests remedial measures.

**The Avocado: Its Insect Enemies and How to Combat Them.** By G. F. Moznette, Assistant Entomologist, Tropical and Subtropical Fruit Insect Investigations. Pp. 32, figs. 21. Contribution from the Bureau of Entomology. April, 1922. (Farmers' Bulletin 1261.)

Of interest to all growers of this fruit.

**Preparation of Peaches for Market.** By H. W. Samson, Specialist in Standardization. Pp. 34, figs. 29. Contribution from the Bureau of Markets and Crop Estimates. April, 1922. (Farmers' Bulletin 1266.)

This bulletin describes the methods of preparing the peach crop for market which have been used successfully under various conditions, and will serve as a basis for comparative studies.

### DEPARTMENT BULLETINS—TECHNICAL.

The publications listed below are technical or scientific bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts.

**The Manufacture of Ethyl Alcohol from Wood Waste.** By F. W. Kressmann, formerly Chemist in Forest Products, Forest Products Laboratory, Madison, Wis. Pp. 109, pls. 3, figs. 10. Contribution from the Forest Service. (Professional Paper.) April 6, 1922. (Department Bulletin 983.) Price, 15 cents.

Discusses the sources of ethyl alcohol and comparative costs of production, and suggests the possibilities of the production of it from wood waste.

**The Preparation of an Edible Oil From Crude Corn Oil.** By A. F. Sievers, Chemical Biologist, and J. H. Shrader, formerly Chemical Technologist, Drug, Poisonous, and Oil Plant Investigations. Pp. 25, figs. 7. Contribution from the Bureau of Plant Industry. (Professional Paper.) Apr. 3, 1922. (Department Bulletin 1010.) Price, 5 cents.

Of interest to manufacturers of corn products.

**The Death Camas Species, *Zygadenus paniculatus* and *Z. elegans*, As Poisonous Plants.** By C. Dwight Marsh, Physiologist in Charge of Investigations of Stock Poisoning by Plants, and A. B. Clawson, Physiologist, Pathological Division. Pp. 25, pls. 3, figs. 5. Contribution from the Bureau of Animal Industry. (Professional Paper.) Apr. 7, 1922. (Department Bulletin 1012.) Price, 10 cents.

Of interest to stockmen grazing stock on western ranges.

**Development of Wilt-Resistant Tomatoes.** By Fred J. Pritchard, Physiologist, Office of Cotton, Truck, and Forage Crop Disease Investigations. Pp. 12, pls. 10. Contribution from the Bureau of Plant Industry. Mar. 28, 1922. (Department Bulletin 1015.) Price, 10 cents.

Discusses the prevalence and characteristics of tomato wilt and describes several wilt-resistant varieties of the tomato.

**Report on Drainage and Prevention of Overflow in the Valley of the Red River of the North.** By P. T. Simons, Senior Drainage Engineer, and Forest V. King, Drainage Engineer. Pp. 89, pls. 5, maps. Contribution from the Bureau of Public Roads. (Professional Paper.) Mar. 31, 1922. (Department Bulletin 1017.) Price, 50 cents.

A comprehensive drainage program essential for the proper development of agriculture in the valley of the Red River of the North. Not available for free distribution.

**Marketing Broom Corn.** By G. B. Alguire, Assistant in Marketing Hay and Broom Corn. Pp. 32, pls. 4, figs. 6. Contribution from the Bureau of Markets and Crop Estimates. Apr. 14, 1922. (Department Bulletin 1019.) Price, 10 cents.

Of interest to growers of broom corn and to manufacturers of brooms.

**Harvest Labor Problems in the Wheat Belt.** By D. D. Lescohier, Collaborator. Pp. 35, figs. 7. Contribution from the Office of Farm Management and Farm Economics. Apr. 12, 1922. (Department Bulletin 1020.) Price, 10 cents.

Discusses the fluctuations in, character of, and mobilization and distribution of farm labor during wheat harvest season.

**Poisonous Metals on Sprayed Fruits and Vegetables.** By W. D. Lynch, C. C. McDennell, J. K. Haywood, A. L. Quaintance, and M. B. Waite. Pp. 66. Contribution from the Bureau of Chemistry. Apr. 17, 1922. (Department Bulletin 1027.) Price, 10 cents.

Gives the results of experiments made to ascertain the amounts of arsenic, lead, and copper remaining on fruits and vegetables treated with poisonous sprays.

**The Blackhead Fireworm of Cranberry on the Pacific Coast.** By H. K. Plank, Scientific Assistant, Fruit Insect Investigations, and Carl Heinrich, Bureau of Entomology. Pp. 46, pls. 3, figs. 14. Contribution from the Bureau of Entomology. Apr. 25, 1922. (Department Bulletin 1032.) Price, 10 cents.

Of interest to cranberry growers on the Pacific Coast.

**Control of the Citrophilus Mealybug.** By R. S. Woglum, Entomologist, and A. D. Borden, Assistant Entomologist, Fruit Insect Investigations. Pp. 20, figs. 13. Contribution from the Bureau of Entomology. (Professional Paper.) Apr. 12, 1922. (Department Bulletin 1040.) Price, 5 cents.

Describes the life history and habits of the insect and suggests methods of control. Of especial interests to citrus growers in California.



**Self-Service in the Retailing of Food Products.** By F. E. Chaffee, formerly Investigator in City Marketing, and McFall Kerbey, Assistant, Bureau of Markets. Pp. 52, figs. 13. Contribution from the Bureau of Markets and Crop Estimates. Apr. 19, 1922. (Department Bulletin 1044.) Price, 10 cents.

A discussion of the advantages and disadvantages of self service in retail marketing.  
**Red Cedar Chests as Protectors Against Moth Damage.** By E. A. Back, Bureau of Entomology, and Frank Rabak, Bureau of Plant Industry. Pp. 14, pls. 5. Contribution from the Bureau of Entomology and the Bureau of Plant Industry. Apr. 13, 1922. (Department Bulletin 1051.) Price, 10 cents.

Compares the results obtained by the use of cedar chests for the prevention of damage by moths with other methods of prevention.

**Marketing Cotton Seed for Planting Purposes.** By J. E. Barr, Investigator in Marketing Seeds. Pp. 24, figs. 7. Contribution from the Bureau of Markets and Crop Estimates. Apr. 5, 1922. (Department Bulletin 1056.) Price, 10 cents.

Of interest to all persons engaged in growing and marketing cotton.

**The Chaulmoogra Tree and Some Related Species. A Survey Conducted in Siam, Burma, Assam, and Bengal.** By Joseph F. Rock, Agricultural Explorer, Office of Seed and Plant Introduction, with chapters by David Fairchild and Frederick B. Power. Pp. 29, pls. 16. Contribution from the Bureau of Plant Industry. (Professional Paper.) Apr. 24, 1922. (Department Bulletin 1057.) Price, 15 cents.

Contains the history and description of Chaulmoogra oil, and recent information on the chaulmoogra tree.

### CIRCULARS.

**A List of Fungi (Ustilaginales and Uredinales) Prepared for Exchange.** By Flora W. Patterson, Mycologist, William W. Diehl, Scientific Assistant, and Edith K. Cash, Botanical Translator, Office of Pathological Collections. Pp. 50. Contribution from the Bureau of Plant Industry. February, 1922. (Department Circular 195.) Price, 10 cents.

**A New Feature of Bud Variation in Citrus.** By Tyozaburo Tanaka, Botanical Assistant and Translator. Pp. 8. Contribution from the Bureau of Plant Industry. January, 1922. (Department Circular 206.) Price, 5 cents.

**The Work of the San Antonio Experiment Farm in 1919 and 1920.** By George T. Ratliffe, Farm Superintendent. Pp. 39, figs. 4. Contribution from the Bureau of Plant Industry. February, 1922. (Department Circular 209.) Price, 10 cents.

**Government Forest Work.** Pp. 47, il. Contribution from the Forest Service. April, 1922. (Department Circular 211.) Price, 5 cents.

**The Manufacture and Sale of Farm Equipment in 1920. A Summary of Reports from 533 Manufacturers.** By H. R. Tolley, Agricultural Engineer, and L. M. Church, Assistant in Agricultural Engineering. Pp. 11. Contribution from the Office of Public Roads. April, 1922. (Department Circular 212.) Price, 5 cents.

**Eradication of Lice on Pigeons.** By H. P. Wood, Entomological Assistant, Investigations of Insects Affecting Health of Animals. Pp. 4. Contribution from the Bureau of Entomology. April, 1922. (Department Circular 213.) Price, 5 cents.

### MISCELLANEOUS.

**Inventory of Seeds and Plants Imported by the Office of Foreign Seed and Plant Introduction during the Period from July 1 to September 30, 1917.** Contribution from the Bureau of Plant Industry. March 25, 1922. (Inventory No. 52; Nos. 44935 to 45220.) Price, 15 cents.

**Instructions for Appraising Stumpage on National Forests.** April, 1922. Pp. 73. Price, 10 cents.

These instructions supplement the National Forest Manual, and will govern the appraisal of stumpage in timber sale, timber settlement, timber trespass and free use business, and in land exchange projects.

### SERIALS.

**Journal of Agricultural Research.** (For Sale only.) Vol. 22, No. 9. Nov. 26, 1921. 1922. Contents: Temperature Relations of Stone Fruit Fungi. (G-256.) By Charles Brooks and J. S. Cooley.—Transportation Rots of Stone Fruits as Influenced by Orchard Spraying. (G-257.) By Charles Brooks and D. F. Fisher.—Storage of Coniferous Tree Seed. (F-7.) By C. R. Tillotson.—Susceptibility of the Different Varieties of Sweet Potatoes to Decay by *Rhizopus nigricans* and *Rhizopus tritici*. (G-258.) By L. L. Harter and J. L. Weimer. Pp. 451-515. il. Price, 15 cents.

**NOTE.**—Volumes 1 to 4 of the Journal of Agricultural Research were published monthly, volumes 5 to 16 weekly, volume 17 monthly, volumes 18, 19, 20, and 21 semi-monthly. Beginning with volume 22, this issue is weekly. The Journal distributed free *only* to the libraries of agricultural colleges and experiment stations, to large universities, technical schools, and such institutions as make suitable exchanges with the department. It will not be sent free to individuals. The Superintendent of Documents will receive subscriptions for this publication, the price being 15 cents a single copy, \$3 a year for domestic circulation, and \$4.25 a year for foreign circulation.

**Experiment Station Record.** Vol. 46, No. 1. January, 1922. Pp. 1-100. Price, 10 cents. Same, Vol. 46, No. 2. February, 1922. Pp. 101-200. Price, 10 cents.

Same, Vol. 46, No. 3. Abstract Number. Apr., 15, 1922. Pp. 201-300. Price, 10 cents.

**NOTE.**—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, 10 numbers each, at 75 cents a volume. Foreign subscription, \$1.25 a volume.



**The Official Record.** Vol. 1, Nos. 14 to 17, April 5, 12, 19, and 26, 1922.

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**Weather, Crops and Markets.** Vol. 1, Nos. 13 to 17, April 1, 8, 15, 22, and 29, 1922.

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### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Johnson County, Iowa.** By W. E. Tharp, of the U. S. Department of Agriculture, and G. H. Artis, of the Iowa Agricultural Experiment Station. Pp. 52, pls. 3, fig. 1, map. (From *F. O. Soils*, 1919.) Price, 15 cents.

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**Bureau of Animal Industry.** No. 179. March, 1922. Pp. 29-40. April 19, 1922. Price, 5 cents.

**Bureau of Animal Industry.** Index to Service and Regulatory Announcements, 1921. Pp. 131-136. 1922. Price, 5 cents.

**Bureau of Chemistry.** Supplement 131. (N. J. 10001-10050. Pp. 1-29. April, 1922. Price, 10 cents.

**Federal Horticultural Board.** No. 71. Pp. 95-178, July-December, 1921, with Contents. April 12, 1922. Price, 5 cents.

### PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Report Chief Weather Bureau 1920-1921.** Administrative Report, fiscal year, 1921, with Meteorological Tables, Calendar year, 1920. [1922.] [4 parts.] 266 p. maps. 4°. Price, \$1.00, cloth.

**Monthly Weather Review.** Vol. 50, No. 1. January, 1922. [April, 1922.] Pp. 1-54, figs. 9, charts, 14. Price, 15 cents a copy, \$1.50 a year, payable to the Superintendent of Documents.

Special Articles: The weather element in railroading. By G. H. Burnham.—Climate and health in the South American tropics. By F. L. Hoffman.—Death Valley—the hottest known region. By A. H. Palmer.—Weather records at lookout stations in northern Idaho. By J. A. Larsen.—Great floods in the Ohio 160 years ago. By H. Pennywitt.—The importance of wireless weather reports from Greenland. By V. Bjerknes.—Discussion by A. J. Henry and E. H. Bowie.—The great snow storm of January 27 to 29, 1922. By P. C. Day and S. P. Fergusson.

NOTE.—The Monthly Weather Review is sent free to cooperating meteorological services, universities, and other institutions of learning which offer a course of instruction in meteorology, and to a limited number of individuals and students of the subject who may be interested in the advancement of the science of meteorology.

JOHN L. COBBS, Jr.,  
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## United States Department of Agriculture,

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[MAY, 1922.]

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**How to Select Foods. II. Cereal Foods.** By Caroline L. Hunt and Helen W. Atwater, Specialists, Office of Home Economics. Pp. 23, figs. 4. Contribution from the States Relations Service. Revised April, 1922. (Farmers' Bulletin 817.)

Describes in simple terms the main principles on which economical food selection must be based and covers cereals and foods made from them.

**The Chinch Bug and Its Control.** By J. R. Horton and A. F. Satterthwait, Scientific Assistants, Cereal and Forage Insect Investigations. Pp. 35, figs. 14. Contribution from the Bureau of Entomology. February, 1922. (Farmers' Bulletin 1223.)

Suitable for general distribution.

**Green Manuring.** By C. V. Piper, Agrostologist in Charge, and A. J. Pieters, Agronomist, Clover Investigations, Office of Forage-Crop Investigations. Pp. 45, figs. 15. Contribution from the Bureau of Plant Industry. April, 1922. (Farmers' Bulletin 1250.)

Describes practical methods of green manuring, and crops suitable for this purpose.

**Important Cultivated Grasses.** By C. V. Piper, Agrostologist, in Charge of Forage-Crop Investigations. Pp. 38, figs. 26. Contribution from the Bureau of Plant Industry. 1922. (Farmers' Bulletin 1254.)

This bulletin is designed to enable farmers and others to become familiar with the most important and most common grasses of the United States.

Each grass is illustrated and agronomic and botanical information concerning it is given.



## SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of the Portneuf Area, Idaho.** By H. G. Lewis, of the U. S. Department of Agriculture, and P. P. Peterson, of the University of Idaho. Pp. 52, pls. 2, fig. 1, map. (From *F. O. Soils*, 1918.) Price, 25 cents.

**Soil Survey of Fayette County, Iowa.** By A. H. Meyer, of the U. S. Department of Agriculture, and H. J. Harper, and H. W. Warner, of the Iowa Agricultural Experiment Station. Pp. 40, fig. 1, map. (From *F. O. Soils*, 1919.) Price, 15 cents.

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**Bureau of Animal Industry.** No. 180. April, 1922. Pp. 41-56. May 24, 1922. Price, 5 cents.

**Bureau of Chemistry.** Supplement 132. Notices of Judgments 10051-10100. Pp. 31-52. May 5, 1922. Price, 5 cents.

**Same.** Supplement 133. Notices of Judgments 10101-10150. Pp. 55-80. May 10, 1922. Price, 5 cents.

**Same.** Supplement 134. Notices of Judgments 10151-10200. Pp. 81-109. May 12, 1922. Price, 5 cents.

**Same.** Supplement 135. Notices of Judgments 10201-10250. Pp. 111-139. Price, 5 cents.

## PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** Vol. 50, No. 2. February, 1922. [May, 1922.] Pp. 55-115, pls. 2, figs. 26, charts 16. Price, 15 cents a copy, \$1.50 a year, payable to the Superintendent of Documents.

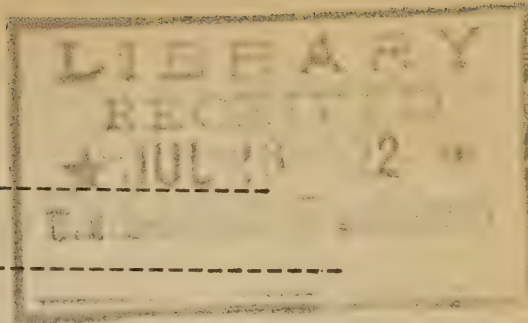
Special articles: Climate and Forest Fires in Montana and northern Idaho, 1909 to 1919. By J. A. Larsen and C. C. Delavan.—Dust spiral near Flagstaff, Ariz. By F. W. Haasis.—Köppen's classification of climates: A review. By P. E. James.—L. F. Richardson on weather prediction by numerical process. By E. W. Woolard.—Meteorology on Captain Amundsen's present Arctic expedition. By H. U. Sverdrup.—Instruction in meteorology for aviators. By W. R. Gregg.—The great glaze storm of February 21-23, 1922, in the Upper Lake Region. By A. J. Henry, J. E. Lockwood, and D. A. Seeley.—On the design of rain-gages. By S. P. Fergusson.—Correlation between wind velocities at the surface and those in the free air. By L. T. Samuels.

NOTE.—The Monthly Weather Review is sent free to cooperating meteorological services, universities, and other institutions of learning which offer a course of instruction in meteorology, and to a limited number of individuals and students of the subject who may be interested in the advancement of the science of meteorology.

JOHN L. COBBS, Jr.,  
Chief, Division of Publications.



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**United States Department of Agriculture,  
MONTHLY LIST OF PUBLICATIONS.**

[JUNE, 1922.]

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**FARMERS' BULLETINS—FOR FREE DISTRIBUTION.**

**NOTE.**—As long as the department's somewhat limited supply of the current numbers of Farmers' Bulletins lasts they may be obtained by all applicants free of charge. They are also for sale at 5 cents per copy unless otherwise noted.

**Home Canning of Fruits and Vegetables.** Pp. 50, figs. 15. Contribution from the Office of Home Economics, States Relations Service. Revised, June, 1922. (Farmers' Bulletin 1211.)

**Webworms Injurious to Cereal and Forage Crops and Their Control.** By George G. Ainslie, Entomological Assistant. Pp. 16, figs. 12. Contribution from the Bureau of Entomology. May, 1922. (Farmers' Bulletin 1258.)

**DEPARTMENT BULLETINS—TECHNICAL.**

The publications listed below are technical or scientific bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts.

**Rust Resistance in Winter-Wheat Varieties.** By Leo E. Melchers, Plant Pathologist, and John H. Parker, in Charge of Crop Improvement, Kansas Agricultural Experiment Station. Pp. 32, pls. 11. Contribution from the Bureau of Plant Industry, in cooperation with the Kansas Agricultural Experiment Station. May, 1922. (Department Bulletin 1046.) Price, 20 cents.

Gives results of experiments made to determine the rust resistance of different varieties of winter wheat. Of interest to all growers of winter wheat.

**Research Methods in the Study of Forest Environment.** By Charles G. Bates, Silviculturist in Charge Fremont Forest Experiment Station, and Raphael Zon, Forest Economist. Pp. 209, figs. 3. Contribution from the Forest Service. May 19, 1922. (Department Bulletin 1059.) Price, 20 cents.

This bulletin is designed primarily for the aid of forest investigators, and is concerned wholly with ecological forest studies.



**Sitka Spruce: Its Uses, Growth, and Management.** By N. Leroy Cary, Forest Examiner. Pp. 38, pls. 20. Contribution from the Forest Service. May, 1922. (Department Bulletin 1060.) Price, 25 cents.

**Sweet-Potato Storage Studies.** By H. C. Thompson, formerly Horticulturist. Office of Horticultural and Pomological Investigations. Pp. 10, figs. 4. Contribution from the Bureau of Plant Industry. May 29, 1922. (Department Bulletin 1063.) Price, 5 cents.

**Relation of Production to Income from Dairy Cows.** By J. C. McDowell, Dairy Division. Bureau of Animal Industry. May 19, 1922. (Department Bulletin 1069.) Price, 5 cents.

A tabulation of the butter fat per cow record as shown by the records of individual cows obtained from 96 cow-testing associations.

### CIRCULARS.

**Fusarium Tuber Rot of Potatoes.** By George K. K. Link and F. C. Meier, Pathologists. Pp. 8, pls. 2. Contribution from the Bureau of Plant Industry. May, 1922. (Department Circular 214.) Price, 5 cents.

**Controlling the Curculio, Brown-Rot, and Scab in the Peach Belt of Georgia.** By Oliver I. Snapp, William F. Turner, and John W. Roberts. Pp. 30, figs. 17. Contribution from the Bureau of Entomology and the Bureau of Plant Industry, in cooperation with the Georgia State Board of Entomology. May, 1922. (Department Circular 216.) Price, 10 cents.

**Phoma Rot of Tomatoes.** By George K. K. Link and F. C. Meier, Pathologists. Pp. 5, pl. 1. Contribution from the Bureau of Plant Industry. May, 1922. (Department Circular 219.) Price, 5 cents.

Describes the stem-rot or black-rot of tomatoes and suggests methods of control.

**Nicotine Dust for Control of the Striped Cucumber Beetle.** (Preliminary Report.) By W. H. White, Scientific Assistant, Truck-Crop Insect Investigations. Pp. 8, figs. 3. Contribution from the Bureau of Entomology. June, 1922. (Department Circular 224.) Price, 5 cents.

**Important Forest Trees of the Eastern United States.** Pp. 11. Contribution from the Forest Service. April, 1922. [June, 1922.] (Department Circular 223.) Price, 5 cents.

### MISCELLANEOUS.

**Inventory of Seeds and Plants Imported by the Office of Foreign Seed and Plant Introduction during the period from April 1 to June 30, 1918.** Pp. 48, pls. 5. Contribution from the Bureau of Plant Industry. May, 1922. (Inventory No. 55: Nos. 45972 to 46302.) Price, 10 cents.

**Inventory of Seeds and Plants Imported by the Office of Foreign Seed and Plant Introduction during the period from October 1 to December 21, 1918.** Pp. 54, pls. 4. Contribution from the Bureau of Plant Industry. May 20, 1922. (Inventory No. 57: Nos. 46588 to 46950.) Price, 10 cents.

### SERIALS.

**Experiment Station Record.** Vol. 46, No. 6. Abstract Number, April 15, 1922. Pp. 501-600. Price, 10 cents.

Same. Vol. 46, No. 7. May, 1922. Pp. 601-700. Price, 10 cents.

**NOTE.**—The Record is a technical review of the world's scientific literature pertaining to agriculture. It is not intended for general distribution and its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. It can not be sent free to individuals having no official connection with public institutions. The Superintendent of Documents will receive subscriptions for this publication, which is issued in two volumes a year, 10 numbers each, at 75 cents a volume. Foreign subscription, \$1.25 a volume.

**Weather, Crops and Markets.** Vol. 1, Nos. 22 to 25, June 3, 10, 17, and 24, 1922.

This publication is issued weekly and combines three important regular periodicals heretofore issued as The Market Reporter, The Monthly Crop Reporter and the National Weather and Crop Bulletin, and which has been discontinued. The free distribution is restricted to individuals and institutions who are assisting the Department in disseminating information connected with agriculture.

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**The Official Record.** Vol. 1, Nos. 23 to 26, June 6, 17, 20, and 27, 1922.

This publication carries official announcements and information concerning the work of the department in general and of the various bureaus.

**SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.**

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**Bureau of Animal Industry.** No. 181. May, 1922. Pp. 57-68. June, 1922. Price, 5 cents.

**Insecticide and Fungicide Board.** No. 40. Notices of Judgments 726-750. Pp. 927-960. May 29, 1922. Price, 5 cents.

**PUBLICATIONS OF THE WEATHER BUREAU.**

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** Vol. 50, No. 3. March, 1922. May 29, 1922. Pp. 117-172, figs. 21, charts 14. Price, 15 cents a copy, \$1.50 a year, payable to the Superintendent of Documents.

Special articles: The new precipitation section of the Atlas of American agriculture. By R. DeC. Ward.—Douglass on climatic cycles and tree-growth. By A. J. Henry.—Clements on drought periods and climatic cycles. By A. J. Henry.—An unusual halo observed at New Haven, February 25, 1922. By C. S. Hastings.—Complex solar halo observed at Ellendale, N. Dak. By C. S. Ling.—Recent contributions to dynamical meteorology. By E. W. Woolard.—Short method of obtaining a Pearson coefficient of correlation and other short statistical processes. By F. M. Phillips.—Climate and photography. By H. G. Cornthwaite.—Anomalous storm tracks. By E. H. Bowie.—Temperature of the soil and air in a desert. By J. G. Sinclair.—Damage to wire service by heavy snowstorm in Kansas. By S. D. Flora.

NOTE.—The Monthly Weather Review is sent free to cooperating meteorological services, universities, and other institutions of learning which offer a course of instruction in meteorology, and to a limited number of individuals and students of the subject who may be interested in the advancement of the science of meteorology.

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
[JULY, 1922.]

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
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**Sugar-Beet Growing Under Irrigation.** By C. O. Townsend, Pathologist in Charge of Sugar-Plant Investigations. Pp. 32, figs. 17. Contribution from the Bureau of Plant Industry. Revised June, 1922. (Farmers' Bulletin 567.)

This bulletin is of interest to farmers in the Northern and Western States who depend in part upon irrigation for water necessary for crop production.

**Slash Pine.** By Wilbur R. Mattoon, Forest Examiner. Pp. 41, figs. 21. Contribution from the Forest Service. May, 1922. (Farmers' Bulletin 1256.)

Describes the range and distribution of this tree, and explains how it can be grown profitably on poorly drained and barren soils as well as on the cut-over lands in the South Atlantic and Gulf States.

**Farm Manufacture of Unfermented Apple Juice.** By Joseph S. Caldwell, Plant Physiologist, Office of Horticultural and Pomological Investigations. Pp. 56, figs. 7. Contribution from the Bureau of Plant Industry. May, 1922. (Farmers' Bulletin 1264.)

The purpose of this bulletin is to supply a fairly complete handbook which will enable any intelligent fruit grower without previous experience in cider making to produce an acceptable sanitary product of good quality.

**Business Methods of Marketing Hay.** By G. A. Collier, Investigator in Marketing Hay. Pp. 25, figs. 11. Contribution from the Bureau of Markets and Crop Estimates. 1922. (Farmers' Bulletin 1265.)



## DEPARTMENT BULLETINS—TECHNICAL.

The publications listed below are technical or scientific bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts.

**Farm Management and Farm Organization in Sumter County, Georgia.** An Analysis of the Business of 534 Farms in 1913, and 550 Farms in 1918. By H. W. Hawthorne, Assistant Economist, H. M. Dixon, Associate Farm Economist, and Frank Montgomery, Assistant Farm Economist. Pp. 97, figs. 8. Contribution from the Office of Farm Management and Farm Economics. (Professional Paper.) June 28, 1922. (Department Bulletin 1034.) Price, 20 cents.

This bulletin presents data regarding organizations, production, expenses, and returns of farms operated by owners and tenants (renters), both white and colored.

The studies were made to determine the significant factors that make for success or failure in the management of representative farms in southern Georgia.

**Curculios that Attack the Young Fruits and Shoots of Walnut and Hickory.** By Fred E. Brooks, Entomologist, Fruit Insect Investigations. Pp. 16, pls. 8. Contribution from the Bureau of Entomology. June 21, 1922. (Department Bulletin 1066.) Price, 10 cents.

**The Handling, Shipping, and Cold Storage of Bartlett Pears in the Pacific Coast States.** By J. R. Magness, Plant Physiologist. Pp. 16. Contribution from the Bureau of Plant Industry, June 17, 1922. (Department Bulletin 1072.) Price, 5 cents.

**Effect of Low Temperature on the Hatching of Gipsy-Moth Eggs.** By John N. Summers, Scientific Assistant, Gipsy-Moth and Brown-Tail Moth Investigations, Bureau of Entomology. Pp. 14. July 22, 1922. (Department Bulletin 1080.) Price, 5 cents.

## CIRCULARS.

**The Insulating Value of Commercial Double-Walled Beehives.** By E. F. Phillips, Apiculturist in Charge, Bee-Culture Investigations. Pp. 9. Contribution from the Bureau of Entomology. May, 1922. (Department Circular 222.) Price, 5 cents.

**Annual Report of the Governor of Alaska on the Alaska Game Law, 1921.** Pp. 7. Contribution from the Biological Survey. June 15, 1922. (Department Circular 225.) Price, 5 cents.

**White-Pine Blister Rust in the Western United States.** Pp. 7, figs. 9. Contribution from the Bureau of Plant Industry. June, 1922. (Department Circular 226.) Price, — cents.

A description of the fungus which causes the rust, how it spreads quarantine regulations, and possible damage to white pine forests.

**Home Tanning.** By R. W. Frey, I. D. Clarke, and F. P. Veitch, Leather Investigations, Bureau of Chemistry. Pp. 22. July, 1922. (Department Circular 230.) Price, 5 cents.

Contains suggestions for the preparation of hides for the market and recipes for tanning and finishing leather on the farm.

**United States Grades for Potatoes Recommended by the U. S. Department of Agriculture.** By Harold W. Samson, Specialist on Standardization, Bureau of Agricultural Economics. Pp. 4. July, 1922. (Department Circular 238.) Price, 5 cents.

Supersedes Department Circular 96, and is effective July, 1922.

## MISCELLANEOUS.

**Vegetable Growing in Guam.** By Glen Briggs, Agronomist and Horticulturist. Pp. 60, pls. 17. June, 1922. (Bulletin 2, Guam Agricultural Experiment Station.) Price, — cents.

**Index to the Yearbook of the United States Department of Agriculture, 1911-1915.** By C. H. Greathouse, Division of Publications. Pp. 178. July, 1922. Price, 25 cents. For Sale Only.



- A Handbook of Dairy Statistics.** By T. R. Pirtle, Dairy Division. Pp. 72, fig. 1. Contribution from the Bureau of Animal Industry. June, 1922. (A. I. 37.) Price, 15 cents.

Gives the facts relative to American dairy production, manufacturing, and commerce in detail and to a more limited extent covers countries all over the world.

#### SERIALS.

- Experiment Station Record.** Vol. 46, No. 8. June, 1922. Pp. 701-800. Price, 10 cents.

- Same, Vol. 46, No. 9, Abstract Number. July, 1922. Price, 10 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture, issued in two volumes a year, 10 numbers each. Its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. The subscription price is 75¢ a volume (foreign subscriptions, \$1.25 a volume), payable to the Superintendent of Documents, Government Printing Office, Washington, D. C.

- Weather, Crops and Markets.** Vol. 2, Nos. 1 to 5, July 1, 8, 15, 22, and 29, 1922.

This publication is issued weekly and combines three important regular periodicals heretofore issued as The Market Reporter, The Monthly Crop Reporter and the National Weather and Crop Bulletin, and which have been discontinued. The free distribution is restricted to individuals and institutions assisting the Department in disseminating information connected with agriculture.

Others desiring the publication can purchase it from the Superintendent of Documents, the subscription price being \$1.00 a year. Address remittance to that official.

- The Official Record.** Vol. 1, Nos. 27 to 30, July 5, 12, 19, and 26, 1922.

This publication carries official announcements and information concerning the work of the department in general and of the various bureaus.

#### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

- Soil Survey of Butte and Henry Counties, Georgia.** By David D. Long, of the Georgia State College of Agriculture, and C. E. Deardorff and Grove B. Jones, of the U. S. Department of Agriculture. Pp. 28, fig. 1, map. (From F. O. Soils, 1919.) Price, 15 cents.

- Soil Survey of Lamar County, Mississippi.** By E. Malcolm Jones, of the Mississippi Geological Survey, and H. G. Lewis, W. I. Watkins, A. C. Anderson, and G. W. Musgrave, of the U. S. Department of Agriculture. Pp. 42, fig. 1, map. (From F. O. Soils, 1919.) Price, 15 cents.

- Soil Survey of Kershaw County, South Carolina.** By W. J. Latimer, W. B. Cobb, W. E. McLendon, Cornelius Van Duyne, and W. S. Eckmann. Pp. 71, fig. 1, map. (From F. O. Soils, 1919.) Price, 15 cents.

#### SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.

These contain *only* information, instruction, and notices governing the enforcement of the food and drugs act, meat inspection, 28-hour, and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. *Free distribution* is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only* at prices noted.

- Bureau of Chemistry.** Supplement 137, Notices of Judgments 10301-10350. Pp. 107-192. July 8, 1922. Price, 5 cents.

- Federal Horticultural Board.** Index to Service and Regulatory Announcements, 1921. Pp. 6. July 3, 1922. Price, 5 cents.



## PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** Vol. 50, No. 4. April, 1922. [July, 1922.] Pp. 173-228, figs. 5, charts 22. Price, 15 cents a copy, \$1.50 a year, payable to the Superintendent of Documents.

Special articles: Formation and movement of West Indian hurricanes. By E. H. Bowie.—Hourly precipitation at Nashville, Tenn. By R. Nunn.—Rainfall and flood at Fort Worth, Tex. By D. S. Landis.—The problem of agricultural ecology. By G. Azzi.—Agricultural climatology of Australia.—Increasing length of frost-free period on Wisconsin cranberry bogs by sanding. By J. Warren Smith.—The seasonal march of the climatic conditions of a greenhouse as related to plant growth. By E. S. Johnston.

**Same, Index to Volume 49, 1921.** Pp. 20. July, 1922.

NOTE.—The Monthly Weather Review is sent free to cooperating meteorological services, universities, and other institutions of learning which offer a course of instruction in meteorology, and to a limited number of individuals and students of the subject who may be interested in the advancement of the science of meteorology.

JOHN L. COBBS, Jr.,  
*Chief, Division of Publications.*



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## United States Department of Agriculture, MONTHLY LIST OF PUBLICATIONS.

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**The Production of Cigar-Leaf Tobacco in Pennsylvania.** By William Frear, Pennsylvania Agricultural Experiment Station, and E. K. Hibsham, Office of Tobacco Investigations, Bureau of Plant Industry. Pp. 20, figs. 9. Contribution from the Bureau of Plant Industry. Revised, June, 1922. (Farmers' Bulletin 416.)

A description of the methods used in growing, handling, and curing cigar filler tobacco in Pennsylvania.

**School Lunches.** By Caroline L. Hunt, Specialist in Food Preparation and Use. Pp. 25, figs. 4. Contribution from the States Relations Service. Revised June, 1922. (Farmers' Bulletin 712.)

A discussion of the special problems presented to parent and teacher by the midday meal of school children.

**Sheep-Killing Dogs.** By M. M. Coll, Animal Husbandman, Bureau of Animal Industry. Pp. 29, figs. 2. June, 1922. (Farmers' Bulletin 1268.)

Contains a digest of existing State dog laws, describes dog-proof and wolf-proof fences, and is of especial interest to sheep raisers. Supersedes Farmers' Bulletin 935, "The Sheep Killing Dog."

**Celery Growing.** By W. R. Beattie, Extension Horticulturist, Office of Horticultural and Pomological Investigations, Bureau of Plant Industry. Pp. 32, figs. 20. June, 1922. (Farmers' Bulletin 1269.)

This bulletin discusses the fundamentals of successful commercial celery production, including up-to-date methods of growing and handling the crop.



**Weather, Crops and Markets.** Vol. 2, Nos. 6 to 9, August 5, 12, 19, and 26, 1922.

This publication is issued weekly and combines three important regular periodicals heretofore issued as *The Market Reporter*, *The Monthly Crop Reporter*, and the *National Weather and Crop Bulletin*, and which has been discontinued. The free distribution is restricted to individuals and institutions who are assisting the Department in disseminating information connected with agriculture.

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**Index to Volume 9, Weekly News Letter, August 3, 1921–December 7, 1921.** Pp. 13. 4<sup>o</sup>.

**NOTE.**—The Weekly News Letter was discontinued with the edition of December 7, 1921.

**SOIL SURVEYS.**

**NOTE.** All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Wright County, Iowa.** By T. H. Benton, of the Iowa Agricultural Experiment Station, and C. O. Jaekel, of the U. S. Department of Agriculture. Pp. 42, fig. 1, map. (From *F. O. Soils, 1919.*) Price, 15 cents.

**SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.**

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**Bureau of Animal Industry.** No. 182, June, 1922. Pp. 69–78. July, 1922. Price, 5 cents.

**Bureau of Chemistry.** Supplement 136, Notices of Judgments 10251–10300. Pp. 141–165. June 20, 1922. Price, 5 cents.

**Insecticide and Fungicide Board.** No. 41. Notices of Judgments 751–775. Pp. 961–981. August 22, 1922. Price, 5 cents.

**PUBLICATIONS OF THE WEATHER BUREAU.**

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

**Monthly Weather Review.** Vol. 50, No. 5. May, 1922. [July, 1922.] Pp. 229–280, figs. 23, charts 15. Price, 15 cents a copy, \$1.50 a year, payable to the Superintendent of Documents.

**Special Articles:** An aerological survey of the United States. By W. R. Gregg.—Relation between rate of movement of anticyclones and the direction and velocity of winds aloft (west and southwest of the highest pressure). By C. L. Mitchell.—High-level isobars as used in everyday weather service. By R. Sekiguchi.—Vertical distribution of air currents in different parts of cyclones and anticyclones. By P. Molchanov.—Free-air winds at Bayonne. By J. Rouch.—The meteorological aspects of the thirteenth national balloon race, May 31, 1922. By V. E. Jakl.—Bumpy flying conditions along the Atlantic coast. By A. W. Parkes.—The Austin tornado of May 4, 1922. By F. Morris.—Some observations made on the origin, growth, and disappearance of the tornado which passed west of Austin, May 4, 1922. By P. T. Seashore.—Tornado frequency in Kansas. By S. P. Peterson.—Kassner on legal meteorology. By C. L. Meisinger.—Dry season, 1921–1922, in the Canal Zone. By R. Z. Fitzpatrick.

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[SEPTEMBER, 1922.]

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**How to Attract Birds in the Middle Atlantic States.** By W. L. McAtee, Assistant in Charge, Food Habits. Research. Pp. 16, figs. 11. Contribution from the Bureau of Biological Survey. Revised, August, 1922. (Farmers' Bulletin 844.)

Prepared for distribution in the Middle Atlantic States.

**Common White Grubs.** By John J. Davis, Entomological Assistant, Cereal and Forage Insect Investigations, Bureau of Entomology. Pp. 30, figs. 21. Revised August, 1922. (Farmers' Bulletin 940.)

Gives the life history and habits of these pests, and suggests methods of control.

**Tractors on Southern Farms.** By H. R. Trolley, Agricultural Engineer, and L. M. Church, Assistant in Agricultural Engineering, Bureau of Public Roads. Pp. 26, figs. 3. August, 1922. (Farmers' Bulletin No. 1278.)

Summarizes the experience of 684 tractor owners in Southern States.

**Laws Relating to Fur Animals, 1922.** By George A. Lawyer, Chief United States Game Warden; and Frank L. Earnshaw, Assistant, Interstate Commerce in Game, Division of Enforcement of the Migratory Bird Treaty and Lacey Acts, Bureau of Biological Survey. Pp. 30. August, 1922. (Farmers' Bulletin 1293.) Price, 5 cents.

Suitable for general distribution.

#### DEPARTMENT BULLETINS—TECHNICAL.

The publications listed below are technical or scientific bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts.

**The Control of Sap-Stain, Mold, and Incipient Decay in Green Wood with Special Reference to Vehicle Stock.**—By Nathaniel O. Howard, Pathologist, Office of Investigations in Forest Pathology. (In cooperation with the For-



est Products Laboratory of the United States Forest Service, Madison, Wis.) Pp. 55, pls. 2, figs. 26. Contribution from the Bureau of Plant Industry. (Professional Paper.) August 19, 1922. (Department Bulletin 1037.) Price, 15 cents.

**Farm Management in Catawba County, North Carolina.** By J. M. Johnson, Agriculturist, and E. D. Strait, Assistant Farm Economist, Bureau of Agricultural Economics, in cooperation with North Carolina State Board of Agriculture. Pp. 23, figs. 6. July, 1922. (Department Bulletin 1070.) Price, 5 cents.

**Experiments with Spray Solutions for Preventing Insect Injury to Green Logs.** By F. C. Craighead, Specialist in Forest Entomology, Forest Insect Investigations, Bureau of Entomology. Pp. 11. (Professional Paper.) August, 1922. (Department Bulletin 1079.) Price, 5 cents.

**Reindeer in Alaska.** By Seymour Hadwen, Chief Veterinarian and Parasitologist, and Lawrence J. Palmer, in Charge of Grazing Investigations, Bureau of Biological Survey. Pp. 74, pls. 24. September 22, 1922. (Department Bulletin 1089.) Price, 25 cents.

**The Effect of Silage on the Flavor and Odor of Milk.** By James A. Gamble, Professor of Dairy Husbandry, University of Maryland, Collaborator, and Ernest Kelly, in Charge of Market Milk Investigations, Dairy Division, Bureau of Animal Industry. Pp. 24, fig. 1. September 20, 1922. (Department Bulletin 1097.) Price, 5 cents.

**Frost Injury to Tomatoes.** By R. B. Harvey, formerly Plant Physiologist, Office of Plant Physiological and Fermentation Investigations, and R. C. Wright, Physiologist, Office of Horticultural and Pomological Investigations, Biological Survey. Pp. 74, pls. 24. September 22, 1922. (Department Bulletin 1099.) Price, 5 cents.

**A Method of Determining Grease and Dirt in Wool.** By D. A. Spencer, J. I. Hardy, and Mary J. Brandon, Animal Husbandry Division, Bureau of Animal Industry. Pp. 20, figs. 6. September, 1922. (Department Bulletin 1100.) Price, 5 cents.

**Kernel-Spot of the Pecan and Its Cause.** By J. B. Demaree, Assistant Pathologist, Office of Fruit-Disease Investigations, Bureau of Plant Industry. Pp. 15, figs. 5. (Professional Paper.) September 26, 1922. (Department Bulletin 1102.) Price, 5 cents.

**The Detection of Hypochlorites and Chloramins in Milk and Cream.** By Philip Rupp, Dairy Chemist, Dairy Division, Bureau of Animal Industry. (Professional Paper.) Pp. 5. August 30, 1922. (Department Bulletin 1114.) Price, 5 cents.

Describes a test which will detect the presence of hypochlorites and chloramins in milk and cream.

#### CIRCULARS.

**Rules and Regulations of the Secretary of Agriculture Under the Food Products Inspection Law of May 11, 1922.** Pp. 6. August, 1922. (Circular 160, Office of the Secretary.) Price, 5 cents.

**Rules and Regulations of the Secretary of Agriculture, for Carrying Out the Federal Highway Act.** Pp. 14. July 31, 1922. (Circular 161, Office of the Secretary.) Price, 5 cents.

**Anthracnose of Muskmelons.** By George K. K. Link and F. C. Meier, Pathologists. Pp. 4, pl. 1. Contribution from the Bureau of Plant Industry. (Office of Cotton, Truck, and Forage Crop Disease Investigations.) May, 1922. (Department Circular 217.) Price, 5 cents. For sale only.

Describes the effects of the disease and methods of control.

**Eastern Blue-Stem of the Black Raspberry.** By R. B. Wilcox, Scientific Assistant, Office of Fruit-Disease Investigations, Bureau of Plant Industry. Pp. 12, pl. 1. June, 1922. (Department Circular 227.) Price, 5 cents.

**Motion Pictures of the U. S. Department of Agriculture.** Prepared by Fred W. Perkins, Assistant in Charge of Motion Pictures, Division of Publications. Pp. 13. August, 1922. (Department Circular 233.) Price, 5 cents.



**Bacterial Spot of Cucumbers.** By F. C. Meier and G. K. K. Link, Pathologists, Office of Cotton, Truck, and Forage Crop Disease Investigations, Bureau of Plant Industry. Pp. 5, pls. 1. August, 1922. (Department Circular 234.) Price, 5 cents. For sale only.

**Defects in the Quality of Butter.** By C. W. Fryhofer, Butter Inspector, Food Products Inspection Service, Bureau of Agricultural Economics. Pp. 13. August, 1922. (Department Circular 236.) Price, 5 cents.

**Some Experiments with a Boric-Acid Canning Powder.** By Ruth B. Edmondson, Assistant Mycologist, and Charles Thom, Mycologist in Charge, Microbiological Laboratory, Bureau of Chemistry, and L. T. Giltner, Veterinary Inspector, Bureau of Animal Industry. Pp. 12. August, 1922. (Department Circular 237.) Price, 5 cents.

**Directory of Officials and Organizations Concerned with the Protection of Birds and Game, 1922.** By George A. Lawyer, Chief United States Game Warden, and Frank L. Earnshaw, Assistant, Interstate Commerce in Game, Enforcement of Migratory Bird Treaty and Lacey Acts, Bureau of Biological Survey. Pp. 20. September 26, 1922. (Department Circular 242.) Price, 5 cents.

#### REPORTS.

**Report of the Porto Rico Agricultural Experiment Station, 1921.** By W. D. May, Agronomist in Charge. Pp. 27, pl. 4. Price, 10 cents.

#### SERIALS.

**Experiment Station Record.** Vol. 45, Index Number. July-December, 1921. Pp. 901-995. September 13, 1922. Price, 10 cents.

**Same.** Vol. 47, No. 1. Pp. 1-100. July, 1922. Price, 10 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture, issued in 2 volumes a year, 10 numbers each. Its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. The subscription price is 75 cents a volume (foreign subscriptions, \$1.25 a volume), payable to the Superintendent of Documents, Government Printing Office, Washington, D. C.

**Weather, Crops and Markets.** Vol. 2, Nos. 10 to 14, Sept. 2, 9, 16, 23, and 30, 1922.

This publication is issued weekly and combines three important regular periodicals heretofore issued as The Market Reporter, The Monthly Crop Reporter, and the National Weather and Crop Bulletin, and which have been discontinued. The free distribution is restricted to individuals and institutions assisting the department in disseminating information connected with agriculture.

Others desiring the publication can purchase it from the Superintendent of Documents, the subscription price being \$1.00 a year. Address remittance to that official.

**The Official Record.** Vol. 1, Nos. 36 to 39, Sept. 6, 13, 20, and 27, 1922.

This publication carries official announcements and information concerning the work of the department in general and of the various bureaus.

#### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Logan County, Kentucky.** By L. R. Schoenmann and Grove B. Jones, of the U. S. Department of Agriculture, and S. D. Averitt, of the Kentucky Agricultural Experiment Station. Pp. 56, fig. 1, map 1. (From F. O. Soils, 1919.) Price, 15 cents.

#### SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.

These contain *only* information, instruction, and notices governing the enforcement of the food and drugs act, meat inspection, 28-hour, and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. *Free distribution* is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only* at prices noted.

**Bureau of Agricultural Economics.** No. 71. Pp. 62. September, 1922. Price, 5 cents.

Previous numbers of this series have been issued as Service and Regulatory Announcements of the Bureau of Markets.



- Bureau of Animal Industry.** No. 183. July, 1922. Pp. 79-89. September 1, 1922. Price, 5 cents.
- Same.** No. 184. August, 1922. Pp. 91-98. September, 1922. Price, 5 cents.
- Bureau of Biological Survey.** No. 47. Hunting of Wild Fowl on Salt River Reservation, Ariz. Pp. 1. September, 1922. Price, 5 cents.
- Bureau of Chemistry.** Supplement 138. Notices of Judgments 10351-10400. Pp. 193-227. July 26, 1922. Price, 5 cents.
- Same.** Supplement 139. Notices of Judgments 10401-10450. Pp. 229-252. September, 1922. Price, 5 cents.

#### SEPARATES.

- Imports and Exports of Agricultural Products.** Compiled in the Bureau of Markets and Crop Estimates, 1922. Pp. 33. (Separate 867, Yearbook, 1921.) Price, 5 cents.
- Statistics of Grain Crops, 1921.** Compiled in the Bureau of Markets and Crop Estimates. Pp. 74. (Separate 868, Yearbook, 1921.) Price, 10 cents.
- Statistics of Crops Other Than Grain Crops, 1921.** Compiled in the Bureau of Agricultural Economics. Pp. 94. (Separate 869, Yearbook, 1921.) Price, 15 cents.
- Statistics of Live Stock, 1921.** Compiled in the Bureau of Markets and Crop Estimates. Pp. 62. (Separate 870, Yearbook, 1921.) Price, 10 cents.
- Miscellaneous Agricultural Statistics, 1921.** Compiled in the Bureau of Markets and Crop Estimates. Pp. 34. (Separate 871, Yearbook, 1921.) Price, 5 cents.
- Wheat Production and Marketing.** By C. R. Ball, Cerealist, C. E. Leighty, Agronomist, Bureau of Plant Industry; O. C. Stine, Agricultural Economist, and O. E. Baker, Agricultural Economist, Bureau of Agricultural Economics. Pp. 83, figs. 72. (Separate 873, Yearbook, 1921.) Price, 10 cents.
- The Cotton Situation.** By A. M. Agelasto, Specialist in Cotton Classing, Bureau of Agricultural Economics; C. B. Doyle, Botanist, Bureau of Plant Industry; and G. S. Meloy, Investigator in Cotton Marketing, and O. C. Stine, Agricultural Economist, Bureau of Agricultural Economics. Pp. 323-406, figs. 53. (Separate 877, Yearbook, 1921.) Price, 15 cents.
- A Graphic Summary of American Agriculture.** By O. E. Baker, Agricultural Economist, Bureau of Agricultural Economics. Pp. 100, figs. 124. (Separate 878, Yearbook, 1921.) Price, 20 cents.
- Based largely on the census of 1920.

#### PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

- Monthly Weather Review.** Vol. 50, No. 6. June, 1922. Pp. 281-340, figs. 10, charts 9. Price, 15 cents a copy, \$1.50 a year, payable to the Superintendent of Documents.

Special articles: The local, or heat thunderstorm. By C. F. Brooks.—The topographic thunderstorm. By C. Hallenbeck.—Tropical cyclones in Australia and the South Pacific and Indian Oceans. By S. S. Visser.—Tropical cyclones in the Northeast Pacific, between Hawaii and Mexico. By S. S. Visser.—A method for the calculation of normal frost dates from short temperature records. By W. B. Van Arsdell.—Dust over the North Atlantic. By W. E. Hurd.—Relations between the weather and yield of wheat in the Argentine Republic. By N. A. Hessling.—The rainfall of Venezuela. By A. J. Henry.—Normals for Brazilian stations. By C. F. Talman.—Concerning the halo of 46 degrees. By L. Besson.—Tornadoes in Wisconsin. By W. P. Stewart.—Thundersqualls in Wisconsin, June 9-10, 1922. By W. P. Stewart.—Concussions from naval gunfiring felt at Los Angeles. By R. A. Nelson.

NOTE.—The Monthly Weather Review is sent free to cooperating meteorological services, universities and institutions of learning which offer courses of instruction in meteorology, and to a limited number of individuals and students interested in the science of meteorology who make application for the Review, addressed to the Chief of the U. S. Weather Bureau and showing sufficient reasons why they should receive copies free of cost.

JOHN L. COBBS, Jr.,  
Chief, Division of Publications.



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## United States Department of Agriculture, MONTHLY LIST OF PUBLICATIONS.


[OCTOBER, 1922.]

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### FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

 NOTE.—As long as the department's somewhat limited supply of the current numbers of Farmers' Bulletins lasts they may be obtained by all applicants free of charge. They are also for sale at 5 cents per copy unless otherwise noted.

**Leaf-Spot, A Disease of the Sugar Beet.** By C. O. Townsend, Pathologist in Charge of Sugar-Plant Investigations, Bureau of Plant Industry. Pp. 19, figs. 10. Revised, August, 1922. (Farmers' Bulletin 618.)

Describes the effect of this disease and suggests methods of control.

**Cottontail Rabbits in Relation to Trees and Farm Crops.** By D. E. Lantz, Late Assistant Biologist, Bureau of Biological Survey. Pp. 14, figs. 4. Revised September, 1922. (Farmers' Bulletin 702.)

This bulletin discusses the distribution and habits of cottontail rabbits and methods of controlling their ravages on trees and cultivated crops by means of trapping, poisoning, and supplying safeguards. For general distribution.

**The False Chinch Bug and Measures for Controlling It.** By F. B. Milliken, Scientific Assistant, Truck Crop and Stored Product Insect Investigations, Bureau of Entomology. Pp. 4, figs. 2. Revised July, 1922. (Farmers' Bulletin 762.)


**The Southern Corn Rootworm and Farm Practices to Control It.** By Philip Luginbill, Entomological Assistant, Cereal and Forage Insect Investigations. Pp. 10, figs. 8. Contribution from the Bureau of Entomology. Revised May, 1922. (Farmers' Bulletin 950.)

Gives progressive farming methods that will reduce the ravages of this insect.

**Fermented Pickles.** By Edwin LeFevre, Scientific Assistant, Microbiological Laboratory, Bureau of Chemistry. Pp. 23. Revised July, 1922. (Farmers' Bulletin 1159.)

Suitable for general distribution.

### DEPARTMENT BULLETINS—TECHNICAL.

 The publications listed below are technical or scientific bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts.

**The Green June Beetle.** By F. H. Chittenden, Entomologist in Charge, and D. E. Fink, Entomological Assistant, Truck Crop Insect Investigations. Pp. 52, pl. 10, figs. 7. Contribution from the Bureau of Entomology. (Professional Paper.) July 28, 1922. (Department Bulletin 891.) Price, 20 cents.

Gives the life history and habits of this insect and suggests methods of control.

**Utilization of Basswood.** By Warren D. Brush, Scientific Assistant. Pp. 64, pls. 8, figs. 7. Contribution from the Forest Service. (Professional Paper.) June 5, 1922. (Department Bulletin 1007.) Price, 20 cents.

This bulletin enumerates the various uses for basswood by factories, and suggests that owners of land suitable mainly for timber production in the basswood region will find it advantageous to encourage the growth of this species.



- Soil Survey of Stevens County, Minnesota.** By P. R. McMiller, of the University of Minnesota Agricultural Experiment Station, and Reese F. Rogers and William G. Smith, of the U. S. Department of Agriculture. Pp. 32, fig. 1. map, 1. (From F. O. Soils, 1919.) Price, 15 cents.
- Soil Survey of the Wenatchee Area, Washington.** By A. E. Kocher. Pp. 91, figs. 2, map 1. (From F. O. Soils, 1918.) Price, 25 cents.

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**Bureau of Animal Industry.** No. 185. September, 1922. Pp. 99–111. October 19, 1922. Price, 5 cents.

**Bureau of Agricultural Economics.** No. 72. October, 1922. Pp. 15. Price, 5 cents.

**Bureau of Biological Survey.** No. 48. Migratory Bird Treaty, Act, and Regulations. Pp. 12. September 30, 1922. Price, 5 cents.

**Bureau of Chemistry.** Supplement 141. Notices of Judgments 10501–10550. Pp. 281–310. October 14, 1922. Price, 5 cents.

#### SEPARATES.

**The Corn Crop.** By C. E. Leighty and C. W. Warburton, Agronomists, Bureau of Plant Industry, and O. C. Stine and O. E. Baker, Agricultural Economists, Bureau of Agricultural Economics. Pp. 161–226. figs. 51. (Separate 872, Yearbook 1921.) Price, 10 cents.

**Our Beef Supply.** By E. W. Sheets, Senior Animal Husbandman, Bureau of Animal Industry, O. E. Baker, Agricultural Economist, C. E. Gibbons, Specialist in Marketing, O. C. Stine, Agricultural Economist, and R. H. Wilcox, Farm Economist, Bureau of Agricultural Economics. Pp. 227–322, figs. 76. (Separate 874, Yearbook 1921.) Price, 20 cents.

#### PUBLICATIONS OF THE WEATHER BUREAU.

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**Monthly Weather Review.** Vol. 50, No. 7. July, 1922. Pp. 341–391. figs. 15. charts, 9. Price, 15 cents a copy, \$1.50 a year, payable to the Superintendent of Documents.

Special Articles: The semipermanent Arizona Low. By E. A. Beals.—The pressure distribution at various levels during the passage of a cyclone across the Plateau region of the United States. By C. L. Meisinger.—A cyclone which crossed the Korean Peninsula. By T. Kobayasi.—An eight-year cycle in rainfall. By H. L. Moore.—Brooks and Glasspoole on the drought of 1921. By A. J. Henry.—Brief description of a new dial for the aneroid. By J. C. Millas.—Thunderstorms of July 13, 1922, in the District of Columbia, Maryland, and Virginia. By A. J. Henry.—Tornadoes in South Dakota, July 8, 1922. By M. E. Blystone.—Influence of varying soil conditions on night-air temperatures. By E. H. Haines.—Predicting minimum temperatures in the vicinity of Walla Walla, Wash. By C. C. Garrett.—The temperature at Port Velho, Amazonas, Brazil. By A. J. Henry.

NOTE.—The Monthly Weather Review is sent free to cooperating meteorological services, universities and institutions of learning which offer courses of instruction in meteorology, and to a limited number of individuals and students interested in the science of meteorology who make application for the Review, addressed to the Chief of the U. S. Weather Bureau and showing sufficient reasons why they should receive copies free of cost.

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**Some Common Edible and Poisonous Mushrooms.** By Flora W. Patterson and Vera K. Charles, Mycologists, Office of Pathological Collections, Bureau of Plant Industry. Pp. 24, figs. 22. Revised July, 1922. (Farmers' Bulletin 796.)

Suitable for general distribution.  
**Dehorning and Castrating Cattle.** By Frank W. Farley, Senior Animal Husbandman, Animal Husbandry Division, Bureau of Animal Industry. Pp. 14, figs. 16. Revised September, 1922. (Farmers' Bulletin 949.)

Suitable for general distribution.  
**Cooling Milk and Cream on the Farm.** By J. A. Gamble, Market Milk Specialist, Dairy Division, Bureau of Animal Industry. Pp. 16, figs. 8. Revised October, 1922. (Farmers' Bulletin 976.)

Suitable for general distribution.  
**Determining the Age of Cattle by the Teeth.** By George W. Pope, Veterinary Inspector, Field Inspection Division, Bureau of Animal Industry. Pp. 4, figs. 6. Revised October, 1922. (Farmers' Bulletin 1066.)

Suitable for general distribution.  
**Hog Lice and Hog Mange.** By Marion Imes, Veterinary Inspector, Zoological Division, Bureau of Animal Industry. Pp. 28, figs. 11. Revised September, 1922. (Farmers' Bulletin 1085.)

Discusses the control of hog lice and hog mange and suggests methods of eradication.  
**Breeds of Swine.** By E. Z. Russell, Animal Husbandry Division. Pp. 22, figs. 18. Contribution from the Bureau of Animal Industry, June, 1922. (Farmers' Bulletin 1263.)

Suitable for general distribution. Supersedes Farmers' Bulletin 765.  
**Farm Lands Available for Settlement.** By B. Henderson, Junior Agricultural Economist, Section of Land Economics, Bureau of Agricultural Economics. Pp. 51, figs. 11. October, 1922. (Farmers' Bulletin 1271.) Price — cents.

This bulletin is designed to point out and describe briefly the land in the United States available for settlement, and to tell the prospective settler something about the conditions he may expect to meet, the types of farming prevailing in the different districts, and the agencies to which he may apply for information.  
**Renting Dairy Farms.** By Howard A. Turner, Junior Agricultural Economist, Office of Farm Management and Farm Economics. Pp. 24. July, 1922. (Farmers' Bulletin 1272.)

A discussion of the various questions which arise when dairy farms are rented on half share receipts, by cash and by crop shares.



**The Velvet Bean.** By C. V. Piper, Agrostologist in Charge, and W. J. Morse, Agronomist, Office of Forage-Crop Investigations, Bureau of Plant Industry. Pp. 27, figs. 14. (Farmers' Bulletin 1276.)

A revision and extension of Farmers' Bulletin 962.

**Plain Concrete for Farm Use.** By T. A. H. Miller, Agricultural Engineer, Division of Agricultural Engineering, Bureau of Public Roads. Pp. 27, figs. 19. October, 1922. (Farmers' Bulletin 1279.)

This bulletin discusses the requirements of good concrete and describes the making and placing of plain concrete according to best practice.

**Apple-Orchard Renovation.** By H. P. Gould, Pomologist, Office of Horticultural and Pomological Investigations, Bureau of Plant Industry. Pp. 32, figs. 25. October, 1922. (Farmers' Bulletin 1284.)

Of interest to persons who are anxious to renovate an apple orchard that has been mismanaged or neglected.

**The Red-Necked Raspberry Cane-Borer.** By F. H. Chittenden, Entomologist in Charge, Truck-Crop Insect Investigations, Bureau of Entomology. Pp. 5, figs. 5. September, 1922. (Farmers' Bulletin 1286.)

This bulletin describes the injurious work of the red-necked raspberry cane-borer, discusses its seasonal history and habits, and gives a remedy for its control.

**The Bulk Handling of Grain.** By E. N. Bates, Investigator in Grain Handling, and A. L. Rush, formerly Investigator in Bulk Grain Handling, Grain Investigations, Bureau of Agricultural Economics. Pp. 22, figs. 17. October, 1922. (Farmers' Bulletin 1290.)

Discusses the advantages derived from handling grain in bulk rather than in bags. Prepared with special reference to the Pacific Coast States.

#### DEPARTMENT BULLETINS—TECHNICAL.

The publications listed below are technical or scientific bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts.

**The Microscopical Examination of Flour.** By George L. Keenan, Microanalyst, and Mary A. Lyons, Microanalyst, Microchemical Laboratory. Pp. 32. Contribution from the Bureau of Chemistry. Revised August, 1922. (Department Bulletin 839.) Price, 5 cents.

Of interest to chemists and food inspectors.

**Portland Cement Concrete Roads.** By James T. Voshell, and R. E. Toms, Bureau of Public Roads. Pp. 67, figs. 15, pls. 10. October 21, 1922. (Department Bulletin 1077.) Price, 15 cents.

The purpose of this bulletin is to supply reliable information on the subject of concrete pavements for the use of highway engineers and others interested in the improvement of public roads.

**Beaver Habits, Beaver Control and Possibilities in Beaver Farming.** By Vernon Bailey, Chief Field Naturalist, Division of Biological Investigations, Bureau of Biological Survey. Pp. 31, figs. 7, pls. 7. October 18, 1922. (Department Bulletin 1078.) Price, 15 cents.

Discusses methods of dealing with beavers when their operations conflict with agriculture and other human activities, methods of transporting them to localities where they may be conserved as a valuable and interesting natural resource, and methods of utilizing them as an important supplement to the fur supply by establishing them in suitable climates, particularly in certain waste lands and other areas unsuited to agriculture.

**The Production of Tulip Bulbs.** By David Griffiths, Horticulturist, Office of Horticultural and Pomological Investigations, Bureau of Plant Industry. Pp. 48, pls. 20. October 19, 1922. (Department Bulletin 1082.) Price, 20 cents.

Contains directions for the production of tulip bulbs on a commercial scale, and discusses the future of the tulip bulb industry in America.

**Alfalfa Root Studies.** By Samuel Garver, Assistant Agrostologist, Bureau of Plant Industry. Pp. 28, figs. 19. (Professional Paper.) Nov. 3, 1922. (Department Bulletin 1087.) Price, 10 cents.

This bulletin, as results of experiments conducted at the Redfield Field Station in South Dakota under varying conditions, shows that the main factors tending to produce modifications in tap roots of Alfalfa are soil, cultural treatment, and injuries.

**Life History of the Kangaroo Rat.** (*Dipodomys spectabilis spectabilis* Merriam.) By Charles T. Vorhies, Entomologist, Agricultural Experiment Station, University of Arizona; and Walter P. Taylor, Assistant Biologist, Bureau of Biological Survey, U. S. Department of Agriculture. Pp. 40, pls. 9, figs. 3. (Professional Paper.) September 13, 1922. (Department Bulletin 1091.) Price, 15 cents.

Contains a summary of the results of investigations of the relation of a subspecies of Kangaroo rat to the carrying capacity of the open ranges, being one phase of a general study of the life histories of rodent groups as they affect agriculture, forestry, and grazing.

**Impounding Water in a Bayou to Control Breeding of Malaria Mosquitoes.** By D. L. Van Dine, Entomologist, Investigations of Insects Affecting the Health of Man, Bureau of Entomology. Pp. 22, figs. 2, pls. 9. October 20, 1922. (Department Bulletin 1098.) Price, 15 cents.

This bulletin discusses the methods used in and results obtained by impounding water in the bayous of the lower Mississippi delta region in order to control malaria development.

**Unit Requirements for Producing Market Milk in Delaware.** By J. B. Bain, Market Milk Specialist, and Ralph P. Hotis, Assistant Market Milk Specialist, Dairy Division, Bureau of Animal Industry. Pp. 16. Nov. 2, 1922. (Department Bulletin 1101.) Price, 5 cents.

Discusses the cost of producing and marketing milk in Delaware.

**Legal Phases of Cooperative Associations.** By L. S. Hulbert, Assistant in Cooperative Marketing, Bureau of Agricultural Economics. Pp. 74. October 23, 1922. (Department Bulletin 1106.) Price, 15 cents.

A discussion of the legal phases found in the decisions of courts of last resort in this country, relative to cooperative associations. The principles applied and announced in these decisions are set forth in the bulletin, together with references to the cases cited.



**Tables for the Microscopic Identification of Inorganic Salts.** By William H. Fry, Scientist in Chemical Investigations, Bureau of Soils. Pp. 22. November 6, 1922. (Department Bulletin 1108.) Price, 5 cents.

Of interest to chemists and investigators.

**One-Variety Cotton Communities.** By O. F. Cook, Bionomist in Charge of the Office of Crop Acclimatization and Adaptation Investigations, Bureau of Plant Industry. Pp. 50. November 25, 1922. (Department Bulletin 1111.) Price, 10 cents.

A discussion of the advantages that are derived when one variety of cotton is planted in a single community.

**Seedling Blight and Stack-Burn of Rice and the Hot-Water Seed Treatment.** By W. H. Tisdale, Pathologist in Charge of Smut Investigations, Office of Cereal Investigations, Bureau of Plant Industry. Pp. 11, pls. 6, figs. 2. (Professional Paper.) November 13, 1922. (Department Bulletin 1116.) Price, 10 cents.

**Proportioning the Ingredients for Ice Cream and Other Frozen Products by the Balance Method.** By O. E. Williams, Dairy Manufacturing Specialist, Dairy Division, Bureau of Animal Industry. Pp. 13. November 6, 1922. (Department Bulletin 1123.) Price, 5 cents.

A technical discussion of a method of calculating mixes of ice cream and other frozen products. Of interest to manufacturers of such products.

**The Marketing of Mill Feeds.** By G. C. Wheeler, Investigator in Feed Marketing, Bureau of Agricultural Economics. Pp. 20, fig. 1. November 20, 1922. (Department Bulletin 1124.) Price, 5 cents.

A discussion which aims to acquaint dairymen with the various phases of feed marketing, enabling them to purchase their feed more advantageously and at the same time place them in a position to determine with little effort what prices they should pay for straight feeds delivered at their station.

### CIRCULARS.

**Trebi Barley, A Superior Variety for Irrigated Land.** By Harry V. Harlan, Merritt N. Pope, and Louis C. Aicher, Office of Cereal Investigations, Bureau of Plant Industry. Pp. 8, figs. 2. October, 1922. (Department Circular 208.) Price, 5 cents.

A discussion of experiments conducted to determine the yields of Trebi Barley under varying conditions.

**The Live-Stock Industry in South America.** By L. B. Burk, Bureau of Agricultural Economics and E. Z. Russell, Bureau of Animal Industry. Pp. 36, figs. 24. October, 1922. (Department Circular 228.) Price, 5 cents.

A discussion of the present development of the live-stock industry of Argentina, Uruguay, Brazil, and Chile. Of interest to live-stock exporters and breeders.

**Forest Products Laboratory.** Issued by the U. S. Forest Service. Pp. 47, figs. 23. June, 1922. (Department Circular 231.) Price, 15 cents.

A brief account of the work and aims of the Forest Products Laboratory of Madison, Wisconsin.

**The National Forests of New Mexico.** Prepared in the U. S. Forest Service. Pp. 21, figs. 8. October, 1922. (Department Circular 240.) Price, 5 cents.

**The Uniformity of Pima Cotton.** By Thomas H. Kearney, Physiologist in Charge, Office of Alkali and Drought Resistant Plant Investigations, Bureau of Plant Industry. Pp. 6. October, 1922. (Department Circular 247.) Price, 5 cents.

Describes the methods which are used in the Salt River Valley of Arizona in providing pure planting seed of Pima long-staple cotton and in conserving the uniformity of the variety.

### MISCELLANEOUS.

**The Sorghums in Guam.** By Glen Briggs, Agronomist. Pp. 28, pls. 9. November 4, 1922. (Bulletin 3, Guam Agricultural Experiment Station.) Price, 10 cents.

**Leguminous Crops for Guam.** By Glen Briggs, Agronomist. Pp. 29, pls. 14. August, 1922. (Bulletin No. 4, Guam Agricultural Experiment Station.) Price, — cents.

### REPORTS.

**Report of the Virgin Islands Agricultural Experiment Station, 1921.** By John B. Thompson, Agronomist in Charge. Pp. 24, pls. 3. October, 1922. Price, 5 cents.

### SERIALS.

**Experiment Station Record.** Vol. 47, No. 3, Abstract Number. October, 1922. Pp. 201-300. Price, 10 cents.

**Same.** Vol. 47, No. 4. Pp. 301-400. September, 1922. Price, 10 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture, issued in 2 volumes a year, 10 numbers each. Its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. The subscription price is 75 cents a volume (foreign subscriptions, \$1.25 a volume), payable to the Superintendent of Documents, Government Printing Office, Washington, D. C.

**The Official Record.** Vol. 1, Nos. 44 to 48, November 1, 8, 15, 22, and 29, 1922.

This publication carries official announcements and information concerning the work of the department in general and of the various bureaus.

**Weather, Crops and Markets.** Vol. 2, Nos. 19 to 22, November 4, 11, 18, and 25, 1922.

This publication is issued weekly and combines three important regular periodicals heretofore issued as The Market Reporter, The Monthly Crop Reporter, and the National Weather and Crop Bulletin, and which has been discontinued. The free distribution is restricted to individuals and institutions who are assisting the Department in disseminating information connected with agriculture.

Others desiring publication can purchase it from the Superintendent of Documents, the subscription price being \$1.00 a year. Address remittance to that official.

### SOIL SURVEYS.

All requests for soil surveys are referred to the Bureau of Soils for attention, the distribution of same being controlled by that bureau.

**Soil Survey of Denton County, Texas.** By William T. Carter and M. W. Beck. Pp. 58, fig. 1 map. (From F. O. Soils, 1918.) Price, 15 cents.



- Soil Survey of the El Centro Area, California.** By A. T. Strahorn, E. B. Watson, A. E. Kocher, and E. C. Eckmann, of the U. S. Department of Agriculture, and J. B. Hammon, of the University of California. Pp. 59, pls. 4, fig. 1, map. (From *F. O. Soils*, 1918.) Price, 25 cents.
- Soil Survey of Frederick County, Maryland.** By W. J. Latimer and R. T. Avon Burke, of the U. S. Department of Agriculture, and O. C. Bruce, of the Maryland Agricultural Experiment Station. Pp. 82, fig. 1, map. (From *F. O. Soils*, 1919.) Price, — cents.
- Soil Survey of Mitchell County, Georgia.** By David D. Long, of the Georgia State College of Agriculture and Mark Baldwin, Earl D. Fowler, H. W. Hawker, and H. V. Geib, of the U. S. Department of Agriculture. Pp. 37, fig. 1, map. (From *F. O. Soils*, 1920.) Price, 15 cents.
- Soil Survey of Nicholas County, West Virginia.** By S. W. Phillips. Pp. 31, fig. 1, map. (From *F. O. Soils*, 1920.) Price, 15 cents.
- Soil Survey of Orange County, Florida.** By J. E. Dunn, Mark Baldwin, and Charles N. Mooney. Pp. 25, fig. 1, map. (From *F. O. Soils*, 1919.) Price, 15 cents.

#### SERVICE AND REGULATORY ANNOUNCEMENTS—FOR SALE ONLY.

These contain *only* information, instruction, and notices governing the enforcement of the food and drugs act, meat inspection, 28-hour, and quarantine laws, and the various regulations of the department. Issued monthly by certain bureaus. *Free distribution* is limited to persons in the employ of the department, to public officials whose duties render it necessary for them to have such information, to journals especially concerned, and to manufacturers and firms whose business is affected by same. Others desiring copies are respectfully referred to the Superintendent of Documents, Government Printing Office, who has them for sale *only* at prices noted.

- Bureau of Animal Industry.** No. 186. October, 1922. Pp. 113-124. November 21, 1922. Price, 5 cents.
- Bureau of Chemistry.** Supplement 140. Notices of Judgments 10451-10500. September 15, 1922. Price, — cents.
- Same.** Supplement 143. Notices of Judgments 10601-10650. Pp. 339-367. November 8, 1922. Price, — cents.
- Federal Horticultural Board,** No. 72. January-June, 1922. Pp. 99. October 27, 1922. Price, 10 cents.

#### PUBLICATIONS OF THE WEATHER BUREAU.

Publications of the Weather Bureau are obtainable only from the Chief of the Weather Bureau or the Superintendent of Documents, Government Printing Office, at the prices noted herein.

- Monthly Weather Review.** Vol. 50, No. 8. August, 1922. Pp. 393-451, figs. 14, charts, 9. Price, 15 cents a copy, \$1.50 a year. Payable to the Superintendent of Documents.

Special Articles: The earth's atmosphere as a circular vortex. By A. L. Beck.—J. Bjerknes and H. Solberg on meteorological conditions for the formation of rain. By A. J. Henry.—Precipitation in Oregon. By E. L. Wells.—The rainfall of Brazil. By A. J. Henry.—The Etesians. By J. S. Paraskevopoulos.—Relation of sunlight to plant development. By G. D. Hearn.—Temperature of air in the ice cavern of Dobsina. By D. L. Steiner.—Severe storms near West Chester, Pa.—The Charlottesville, Virginia, tornado of August 7, 1922. By A. W. Giles.

NOTE.—The Monthly Weather Review is sent free to cooperating meteorological services, universities and institutions of learning which offer courses of instruction in meteorology, and to a limited number of individuals and students interested in the science of meteorology who make application for the Review, addressed to the Chief of the U. S. Weather Bureau and showing sufficient reasons why they should receive copies free of cost.

JOHN L. COBBS, Jr.,  
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## United States Department of Agriculture, MONTHLY LIST OF PUBLICATIONS.

[DECEMBER, 1922.]

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A copy of any of the publications listed herein, except those otherwise noted, may be obtained free upon application to the Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C., as long as the department's supply lasts.

After this department's supply is exhausted, publications can still be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., but by purchase only, and at the prices noted herein.

☞ Send all remittances to the Superintendent of Documents direct. His office is not a part of the Department of Agriculture.

### FARMERS' BULLETINS—FOR FREE DISTRIBUTION.

☞ NOTE.—As long as the department's somewhat limited supply of the current numbers of Farmers' Bulletins lasts they may be obtained by all applicants free of charge. They are also for sale at 5 cents per copy unless otherwise noted.

**Tobacco Culture.** By W. W. Garner, Physiologist in Charge of Tobacco and Plant-Nutrition Investigations, Bureau of Plant Industry. Pp. 24, figs. 4. Revised October, 1922. (Farmers' Bulletin 571.)

Indicates the areas in which the different types of tobacco are produced and gives the necessary details regarding the varieties of seed to be used and the methods of growing the seedlings, transplanting to the field, fertilizing, cultivating, caring for, and harvesting the crop in each of the more important tobacco-growing regions.

**Homemade Fruit Butters.** By C. P. Close, Pomologist, Office of Horticultural and Pomological Investigations, Bureau of Plant Industry. Pp. 8, figs. 2. Revised September, 1922. (Farmers' Bulletin 900.)

Suitable for general distribution.

**Making American Cheese on the Farm.** By C. M. Gere, Cheesemaker, Dairy Division, Bureau of Animal Industry. Pp. 19, figs. 14. Revised August, 1922. (Farmers' Bulletin 1191.)

Suitable for general distribution.

**The More Important Apple Insects.** By A. L. Quaintance, Entomologist in Charge, and E. H. Siegler, Entomologist, Fruit Insect Investigations, Bureau of Entomology. Pp. 95, figs. 192. September, 1922. (Farmers' Bulletin 1270.) Price, 15 cents.

Aims to acquaint the fruit grower with the general distribution, description, life history, and control of the apple insects with which he is likely to be troubled.

**Weevils in Beans and Peas.** By E. A. Back, Entomologist in Charge, Stored-Product Insect Investigations, Bureau of Entomology. Pp. 35, figs. 29. August, 1922. (Farmers' Bulletin 1275.)

Preventive and remedial measures for lessening damage caused by weevils in beans and peas are described in this bulletin.



**The Hard Red Winter Wheats.** By J. Allen Clark, Agronomist in Charge, and John H. Martin, Agronomist, Western Wheat Investigations, Office of Cereal Investigations, Bureau of Plant Industry. Pp. 10, figs. 2. October, 1922. (Farmers' Bulletin 1280.)

Describes the 12 distinct varieties of hard red winter wheat and designates the areas to which they are adapted.

**The Hard Red Spring Wheats.** By J. Allen Clark, Agronomist in Charge, and John H. Martin, Agronomist, Western Wheat Investigations, Office of Cereal Investigations, Bureau of Plant Industry. Pp. 28, figs. 11. November, 1922. (Farmers' Bulletin 1281.)

Describes the 24 distinct varieties of hard red spring wheat and designates the areas to which they are adapted.

**Foreign Material in Spring Wheat.** By R. H. Black, Specialist, and C. R. Haller, Scientific Assistant, Grain Investigations, Bureau of Agricultural Economics. Pp. 22, figs. 12. December, 1922. (Farmers' Bulletin 1287.)

Tells how to remove foreign material from spring wheat, both on the farm and at the country elevator.

#### DEPARTMENT BULLETINS—TECHNICAL.

The publications listed below are technical or scientific bulletins applying to a special industry or locality. The edition is limited, but they will be furnished free to persons who can use such specialized information as long as the supply lasts.

**Classification of American Wheat Varieties.** By J. Allen Clark, Agronomist in Charge, John H. Martin, Agronomist, Western Wheat Investigations, and Carleton R. Ball, Cerealist in Charge, Office of Cereal Investigations, Bureau of Plant Industry. Pp. 238, figs. 76, pls. 60. (Professional Paper.) November 8, 1922. (Department Bulletin 1074.) Price, 65 cents. For sale only.

The purpose of this bulletin is to provide a practical and usable system of classification of wheat varieties that are grown commercially in the United States, thereby standardizing the varietal nomenclature and enabling growers to identify varieties with which they are concerned.

**The Effects of Inbreeding and Crossbreeding of Guinea Pigs.** By Sewall Wright, Senior Animal Husbandman in Animal Genetics, Animal Husbandry Division, Bureau of Animal Industry. Pp. 63, figs. 11, pls. 6. (Professional Paper.) November 15, 1922. (Department Bulletin 1090.) Price, 15 cents.

A discussion of decline in vigor and differentiation among inbred families.

**The Gipsy Moth on Cranberry Bogs.** By Charles W. Minott, Gipsy Moth Assistant, Gipsy Moth and Brown-tail Moth Investigations, Bureau of Entomology. Pp. 19, figs. 4, pls. 6. October 16, 1922. (Department Bulletin 1093.) Price, 10 cents.

Discusses the dispersion, feeding habits, and the ravages of the gipsy moth on cranberry bogs, and suggests methods of control.

**Chemical Changes in Calcium Arsenate During Storage.** By C. C. McDonnell and C. M. Smith, Insecticide and Fungicide Laboratory, Bureau of Chemistry, and B. R. Coad, Delta Laboratory, Bureau of Entomology. Pp. 28, figs. 52. November 28, 1922. (Department Bulletin 1115.) Price, 10 cents.

Results of investigations made to determine what changes occur in calcium arsenate during storage that would cause injury when that product is used in spraying the cotton plant.

**A Physical and Chemical Study of Milo and Feterita Kernels.** By George L. Bidwell, Leslie E. Bopst, and John D. Bowling, Cattle Food and Grain Investigation Laboratory, Miscellaneous Division, Bureau of Chemistry. Pp. 8, fig. 1. November 27, 1922. (Department Bulletin 1129.) Price, 5 cents.

Results of experiments conducted for the purpose of determining suitable process by which nonsaccharine sorghums can be utilized in the manufacture of starch and feeding stuffs. The publication is technical and is intended for the use of investigators and engineers who may be called upon to design machinery for the manufacture of starch and feeding stuffs from nonsaccharine sorghums.

#### CIRCULARS.

**Utility Value of Pure-Bred Live Stock.** By D. S. Burch, Editor, Bureau of Animal Industry. Pp. 22, figs. 13. (Department Circular 235.) Price, 10 cents.

The purpose of this circular is to supply information about pure-bred live stock and its suitability for general farm use.

**Status and Results of County Agent Work in Northern and Western States, 1921.** By W. A. Lloyd, in Charge, County Agent Work, Office of Extension Work in the North and West, States Relations Service. Pp. 42, figs. 14. October, 1922. (Department Circular 244.) Price, 10 cents.



## REPORTS.

- Report of the Secretary of Agriculture, 1922. Pp. 64.
- Report of the Chief of the Division of Accounts and Disbursements, 1922. Pp. 6.
- Report of the Chief of the Bureau of Animal Industry, 1922. Pp. 62.
- Report of the Chief of the Bureau of Biological Survey, 1922. Pp. 39.
- Report of the Chemist, 1922. Pp. 38.
- Report of the Entomologist, 1922. Pp. 32.
- Report of the Office of Exhibits, 1922. Pp. 4.
- Report of Chief, Office of Farm Management and Farm Economics, 1922. Pp. 22.
- Report of the Federal Horticultural Board, 1922. Pp. 26.
- Report of the Acting Director of the Fixed Nitrogen Research Laboratory for the Fiscal Year Ended June 30, 1922. Pp. 10.
- Report of the Forester, 1922. Pp. 55.
- Report of the Insecticide and Fungicide Board, 1922. Pp. 8.
- Report of the Librarian, 1922. Pp. 18.
- Report of the Chief of the Bureau of Markets and Crop Estimates, 1922. Pp. 40.
- Report of the Packers and Stockyards Administration, 1922. Pp. 16.
- Report of the Chief of the Bureau of Plant Industry, 1922. Pp. 34.
- Report of the Chief of the Bureau of Public Roads, 1922. Pp. 43.
- Report of the Chief of the Division of Publications, 1922. Pp. 18.
- Report of the Chief of the Bureau of Soils, 1922. Pp. 10.
- Report of the Solicitor, 1922. Pp. 11.
- Report of the Director of the States Relations Service, 1922. Pp. 47.
- Report of the Chief of the Weather Bureau, 1922. Pp. 31.
- Report of the Hawaii Agricultural Experiment Station, 1921. By J. M. Westgate, Agronomist in Charge. Pp. 65, pls. 9. September 12, 1922. Price, 10 cents.

## SERIALS.

- Experiment Station Record. Vol. 47, No. 5. October, 1922. Pp. 401-500. Price, 10 cents.
- Same. Vol. 47, No. 6. Abstract Number. December 22, 1922. Pp. 501-600. Price, 10 cents.

NOTE.—The Record is a technical review of the world's scientific literature pertaining to agriculture, issued in 2 volumes a year, 10 numbers each. Its free distribution is restricted to persons connected with the agricultural colleges, experiment stations, and similar institutions, and to libraries and exchanges. The subscription price is 75 cents a volume (foreign subscriptions, \$1.25 a volume), payable to the Superintendent of Documents, Government Printing Office, Washington, D. C.

- The Official Record. Vol. 1, Nos. 49 to 52, December 6, 13, 20, and 27, 1922.

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- Weather, Crops and Markets. Vol. 2, Nos. 23 to 27, December 2, 9, 16, 23, and 30, 1922.

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**Soil Survey of Coweta and Fayette Counties, Georgia.** By David D. Long, of the Georgia State College of Agriculture, and A. L. Patrick, A. M. O'Neal, jr., and E. H. Stevens, of the U. S. Department of Agriculture. Pp. 34, fig. 1, map. (From *F. O. Soils*, 1919.) Price, 15 cents.

**Soil Survey of Decatur County, Indiana.** By Mark Baldwin and J. A. Slipper, of the U. S. Department of Agriculture, and S. C. Jones, and O. H. Sears, of Purdue University Agricultural Experiment Station. (Part 1) **The Management of Decatur County Soils.** By A. T. Wiancko and S. D. Conner, Purdue University Agricultural Experiment Station. (Part 2) Pp. 32, fig. 1, map. (From *F. O. Soils*, 1919.) Price, 15 cents.

**Soil Survey of Monroe County, Georgia.** By David D. Long, of the Georgia State College of Agriculture, and F. A. Hayes, A. M. O'Neal, jr., and C. E. Deardorff, of the U. S. Department of Agriculture. Pp. 36, fig. 1, map. (From *F. O. Soils*, 1920.) Price, 15 cents.

**Soil Survey of Oconee, Morgan, Greene, and Putnam Counties, Georgia.** By David D. Long, of the Georgia State College of Agriculture, and E. T. Maxon, N. M. Kirk, H. G. Lewis, F. A. Hayes, E. C. Hall, H. V. Geib, and G. A. Crabb, of the U. S. Department of Agriculture. Pp. 61, fig. 1, maps 2. (From *F. O. Soils*, 1919.) Price, 25 cents.

**Soil Survey of Sioux County, Nebraska.** By W. A. Rockie and C. E. Deardorff, of the U. S. Department of Agriculture, and L. H. Britton and L. S. Paine, of the Nebraska Soil Survey. Pp. 43, fig. 1, maps 2. (From *F. O. Soils*, 1919.) Price, 25 cents.

**Soil Survey of the White Plains Area, New York.** By Cornelius Van Duyne, of the U. S. Department of Agriculture, and J. H. Bromley, of the New York State College of Agriculture. Pp. 44, fig. 1, maps 2. (From *F. O. Soils*, 1919.) Price, 25 cents.

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**Bureau of Chemistry.** Supplement 144. Notices of Judgments 10651-10700. Pp. 369-393. November 23, 1922. Price, 5 cents.

**Same.** Supplement 145. Notices of Judgments 10701-10750. Pp. 395-418. December 18, 1922. Price, 5 cents.

**Same.** Supplement 146. Notices of Judgments 10751-10800. Pp. 421-444. December, 1922. Price, 5 cents.

**Monthly Weather Review.** Vol. 50, No. 9. September, 1922. (December, 1922.) Pp. 453-514, figs. 29, charts 24. Price, 15 cents a copy, \$1.50 a year, payable to the Superintendent of Documents.

Special articles: The preparation and significance of free-air pressure maps for the central and eastern United States. By C. L. Meisinger.—J. Bjerknes and H. Solberg on the life cycle of cyclones and the polar front theory of atmospheric circulation. By A. J. Henry.—Foot-layer densities of snow. By H. F. Alps.—A simple snow-density measurer. By W. W. Kornhonen.—The climatograph: A new form of chart for climatic phenomena. By E. N. Munns.—Dry months in the United States. By A. J. Henry.—Records of tornadoes in Tennessee, 1802-1921. By R. Nunn.—The heavy rainfall of September 2, 1922, at Washington, D. C. By A. J. Henry.—Sessions of the Meteorological Section of the International Union of Geodesy and Geophysics, Rome, Italy, May 4-9, 1922. By H. H. Kimball.

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Chief, Division of Publications.